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DYESTUFF REPORTER

BRUARY 25, 1946
LUME 35, No. 4

Here, in the Du Pont Technical Laboratory, experienced colorists are constantly studying problems relating to the application of dyestuffs.

It is here, in this laboratory, that *your* dyeing problems become *our* problem. Our Technical Staff stands ready to place its fund of knowledge and experience at your disposal. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

Du Pont Dyestuffs

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***Laboratory Certified for* DURABILITY**

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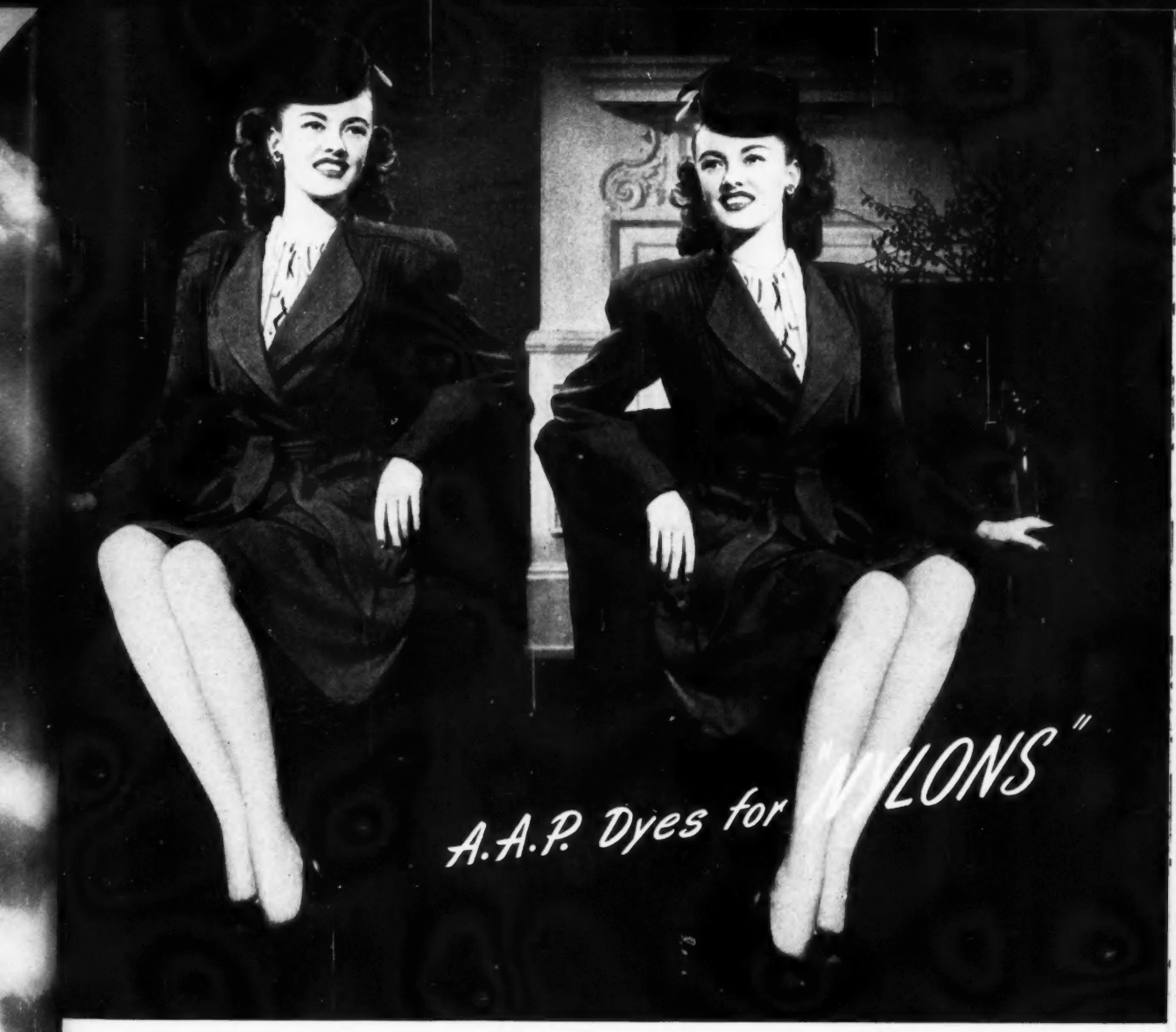

Each pair **IDENTICAL** *as twins*

Each dyed lot **UNIFORM** *in* SHADE—QUALITY—APPEAL

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ARKANSAS CO., INC.

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NEWARK NEW JERSEY

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Velvamine GF is a blend of amines and softeners designed to protect acetate colors from gas or fume fading. It resists removal by drycleaning and, when used on mixed fabrics, has a minimum effect on the shade and light fastness of the direct colors Velvamine GF produces a soft, full hand and does not affect the appearance of the treated fabrics.

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You can take General MacArthur's word for it!

"The Red Cross has done a 100 per cent job in this theatre. Mathematical limitations alone prevent my saying the Red Cross services here have been more than 100 per cent."

—General Douglas MacArthur

SO SPEAKS a distinguished eye-witness of your Red Cross in action. General MacArthur *saw* the Red Cross at your fighting man's side, all through the gruelling months of the Pacific campaign. He saw Red Cross men under fire on D-Day beachheads—sweat it out in foxholes—follow the men with candy, cigarettes and other comforts right up to the firing line.

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He also knows, as you do, that your Red Cross cannot yet say, "Mission accomplished." It still has an enormous task to do. With your help, it will carry this task to a successful completion.

The War is over . . .
but another battle has begun

Your Red Cross must now fight on three new battlefronts. The thousands of our men still in veterans' hospitals and in faraway lands overseas need its comfort and cheer now, as they did when the bombs were bursting. And as our servicemen return to civilian life, your Red Cross must lend them a helping hand.

And when disaster strikes here at home—fire, flood, tornado—your Red Cross must be ready with aid for the victims. Its war against human misery is never wholly won.

But remember—it is *your* Red Cross. It depends on you for its very existence. So give from your heart. Give generously. Give *today!*

YOUR Red Cross MUST CARRY ON . . . *GIVE!*

NYANZA

ANILINE & ALIZARINE COLORS

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TEXTILE CHEMICALS

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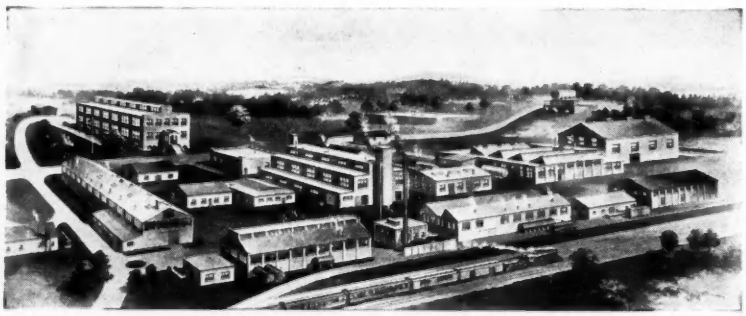
FINISHING MATERIALS

FOR

WOOL — COTTON — RAYON — ACETATE AND MIXED FIBERS



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How would YOU print this pattern?

This design, printed on rayon crepe dress goods, was produced by the *Apponaug Company* for *Arthur Beir & Co.*, well-known converter of high quality cotton and rayon fabrics.

Here's how it was done:

1. The light blue ground was dyed in the usual manner with direct colors.
2. The white discharge was obtained by printing with Aridye* White F2I, cut 1:5 with Aridye Clear containing 12 oz. per gal. sulfoxylate.
3. The gray was overprinted, using 2 parts Aridye Black FK and 1 part Aridye Blue FC2G, cut 1:48.
4. The outline was printed with aniline black using a starch and gum thickener.
5. After printing, the fabric was dried, padded with peroxide, steam aged, washed.

Note particularly, the fine details of the feathery edging, the close registration and the complete absence of halo. Only by the use of Aridye Pigment Colors could these results have been obtained in printing this unusually striking floral design.

It is because of their excellent printing qualities, ease of application and exceptional fastness to sunlight and washing that Aridye Pigment Colors, alone or in combination with other dyestuffs, are being used more and more by such foremost printers of fine cottons and rayons as the Apponaug Company.

The pattern shown here is but one of many examples of the unusual effects which are easy to obtain with Aridye Pigment Colors, but difficult to produce by conventional methods. It is by no means an exception. For Aridye Colors also offer you many definite advantages when used in your everyday dyeing and printing jobs.

Why not have an Aridye technical service man discuss your printing and dyeing problems with you? Write to Aridye Corporation—Pioneers in Pigment Colors for Textiles—Fair Lawn, New Jersey.

*REG. U. S. PAT. OFF.

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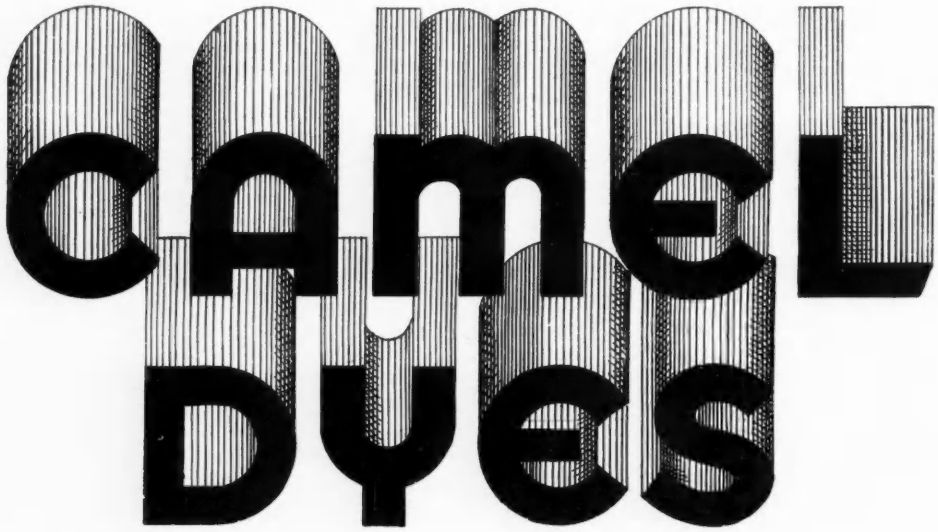

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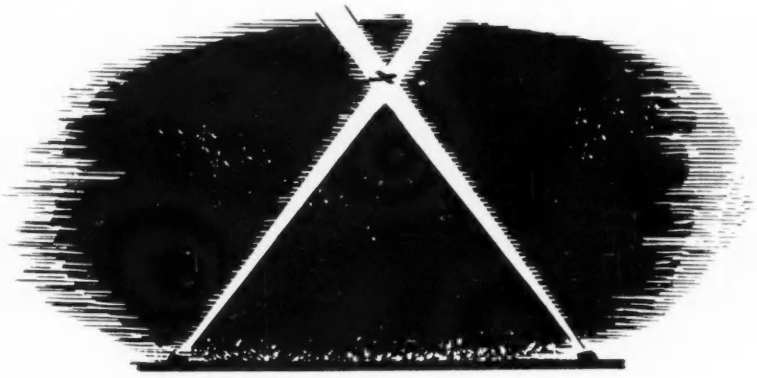
all-purpose de-sizing agent



. . works easily in a wide range of temperatures and pH

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We have endeavored to make Diastafor—Type L as nearly fool-proof as possible. Give it a trial and see for yourself the results it produces. For further information, write to Standard Brands Incorporated, *Diastafor Division,* 595 Madison Avenue, New York 22, New York.

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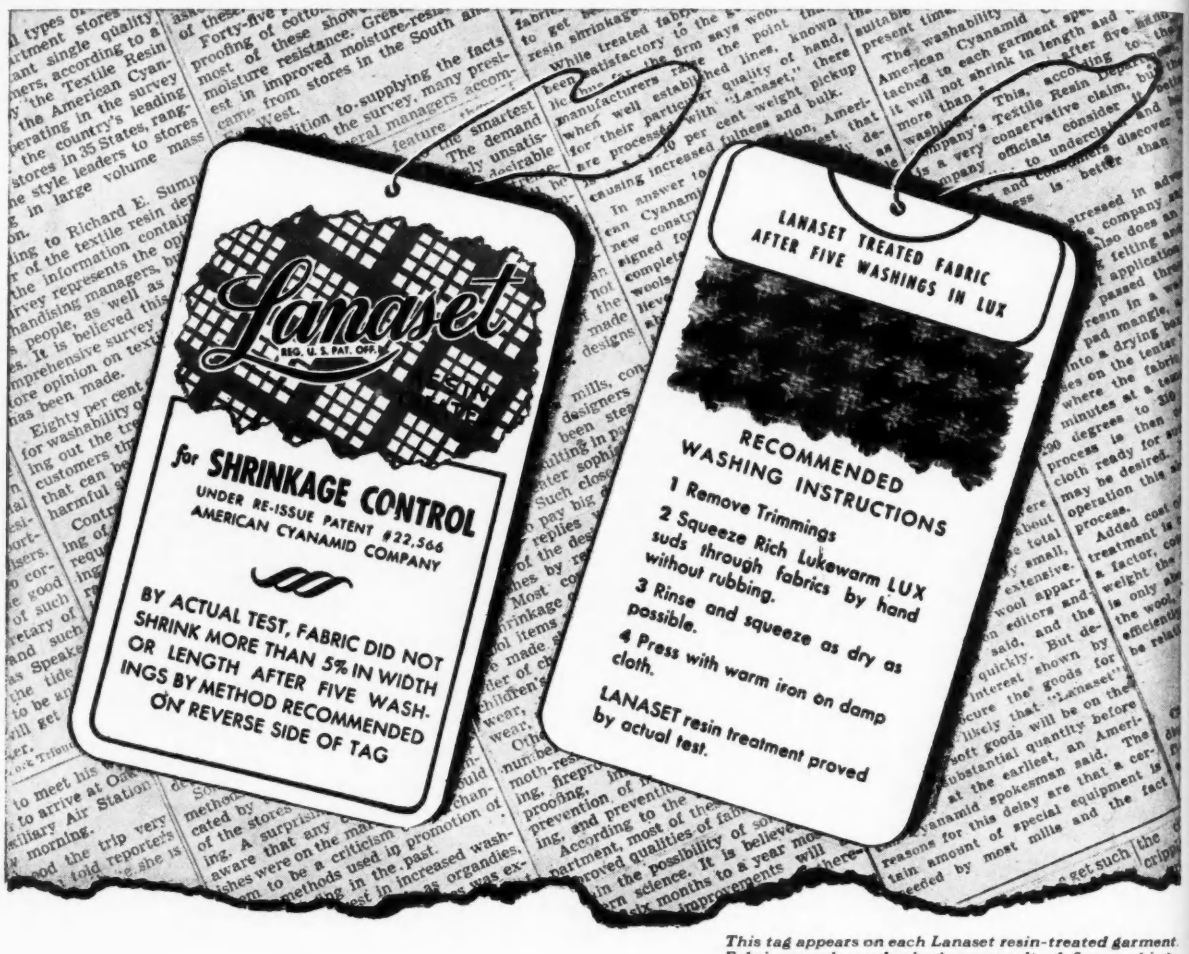
A TRADE MARK OF STANDARD BRANDS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REG. U. S. PAT. OFF.
for SHRINKAGE CONTROL
UNDER RE-ISSUE PATENT #22,566
AMERICAN CYANAMID COMPANY
BY ACTUAL TEST, FABRIC DID NOT SHRINK MORE THAN 5% IN WIDTH OR LENGTH AFTER FIVE WASHINGS BY METHOD RECOMMENDED ON REVERSE SIDE OF TAG
LANASET TREATED FABRIC AFTER FIVE WASHINGS IN LUX
RECOMMENDED WASHING INSTRUCTIONS
1 Remove Trimmings
2 Squeeze Rich Lukewarm LUX suds through fabrics by hand without rubbing.
3 Rinse and squeeze as dry as possible.
4 Press with warm iron on damp cloth.
LANASET resin treatment proved by actual test.

This tag appears on each Lanaset resin-treated garment. Fabric sample on back shows result of five washings.

MAKING NEWS IN WASHABLE WOOLENS

The Lanaset* Resin tag reproduced above is making news throughout the textile industry and retail trade—for it is the symbol of that long desired commodity—"washable woolens."

Lanaset treated merchandise is planned in the fabric development stage, so that cloth construction and finish are economically coordinated to produce best results in weight of fabric and control of shrinkage and felting. At the same time, resiliency, texture, absorbency and other desirable qualities of the wool are retained through repeated washing or dry cleaning.

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Lanaset RESIN
FOR WOOL SHRINKAGE CONTROL

*Reg. U. S. Pat. Off.

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National Aniline stands ready
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dye and color to produce
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where color is used.
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PLACE IT IN THE FADEOMETER!

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The light tests will be identical — both excellent.

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Also, reserves acetate a pure white.

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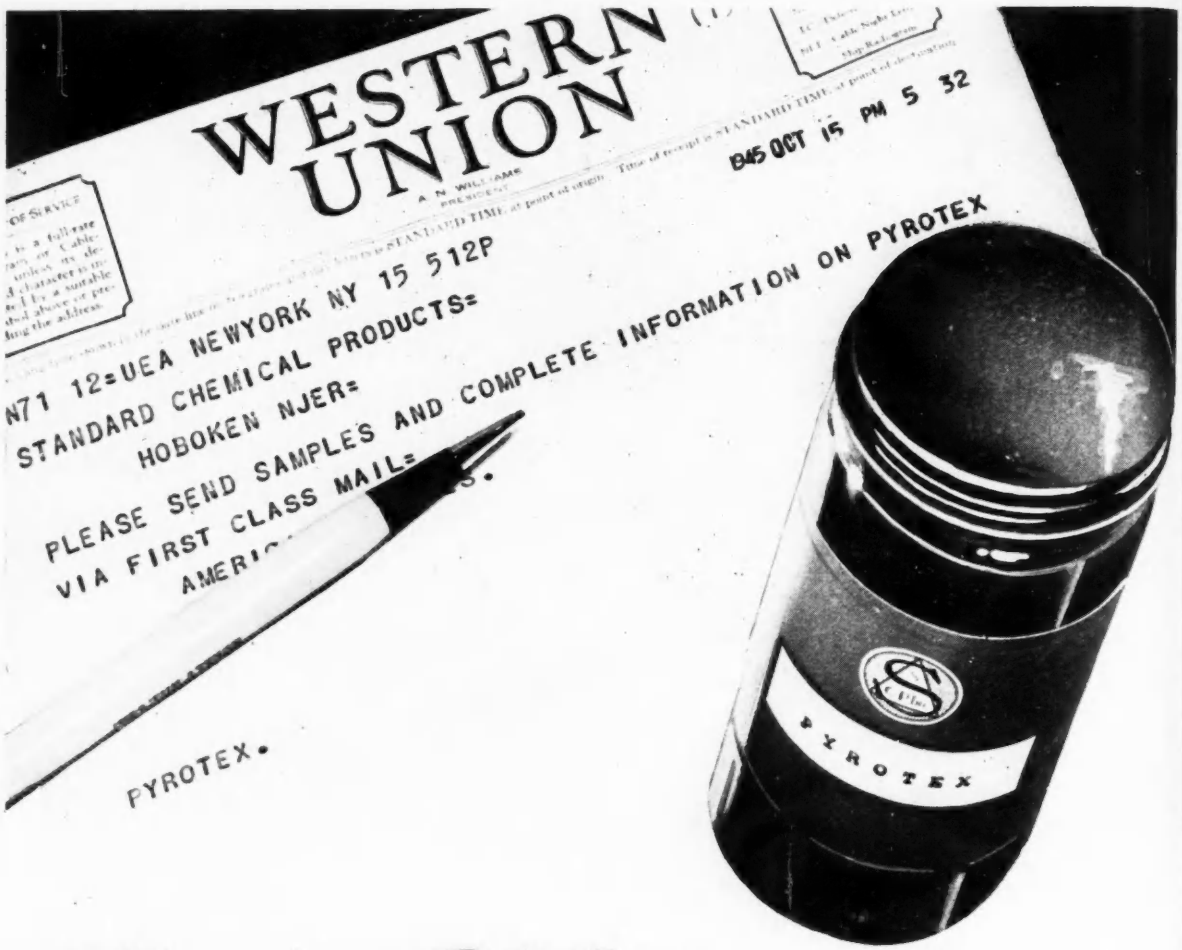

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...FOR PYROTEX!

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Write for samples today!

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Unlike ordinary textile gums which usually reduce color values, AMBERTEX actually increases the color yield. It is a smooth, grit-free, clear paste which is . . . *readily diluted* to an easy-flowing consistency with cold water . . . *highly resistant* to the thinning out actions of strong alkalis . . . *uniformly penetrating* to insure smooth, not mottled, colors. And its cohesive properties hold patterns to the exact proportion of the original engravings.

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FEBRUARY 25, 1946

VOLUME 35 NUMBER 4

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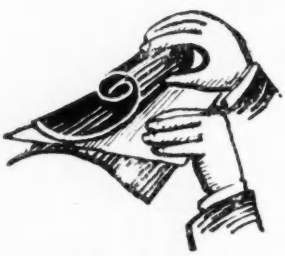

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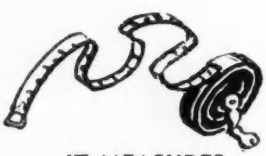

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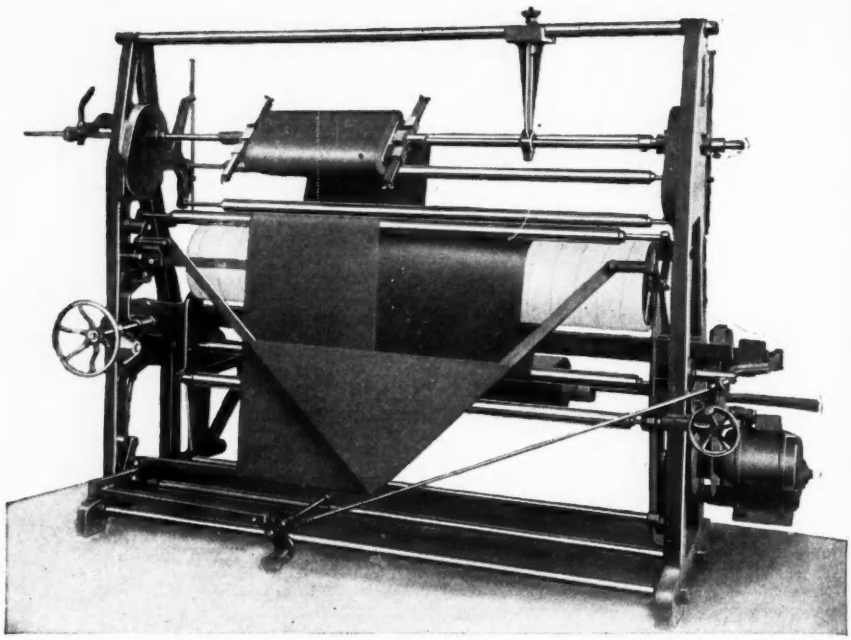

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STUDENT CHAPTERS

Lowell Textile Institute
North Carolina State College
Philadelphia Textile Institute
New Bedford Textile School

Members should notify the Secretary immediately of all address changes

PRESIDENT'S CORPORATE MEMBERSHIP DINNER

Pennsylvania Hotel, New York City, January 3, 1946

P. J. WOOD

Toastmaster

ADDRESS OF WELCOME

EMMETT J. DRISCOLL

Chairman, New York Section

MR. PRESIDENT, Mr. Hahn, Honored Guests, Ladies and Gentlemen: On behalf of the New York Section it is my pleasure to extend to you our greetings and a hearty welcome, and we sincerely trust that you will enjoy your stay with us, and that the Victory Convention and this meeting together will long be cherished in memory.

I think it is fitting tonight that I discuss in a small way the purpose of this meeting and its major theme, "Peacetime Applications of War Developments in Textiles." The various committees that have been responsible for all of the proceedings here have worked diligently and applied themselves without stint, and they have kept before them the objectives. I believe it is certainly true that when the convention ends on Saturday evening those of us who have been responsible for the convention will feel repaid in the thought that the time spent by all of our members and our guests in following the technical programs will have resulted in each one of us going home stimulated in mind and thought. We will have a clear perspective and will clearly understand that many applications of war developments so clearly drawn here and so carefully portrayed by all of our speakers will leave an impact on the thinking of all of us.

This is not only a Victory Convention but a convention of progress. At some time in the near future the textile industry to which we are all allied will get back to peacetime conditions, free from controls and faced with competition within itself, and more particularly with competition from competing industries.

The exhibitions here at the convention are, of course, basic, but they do give comfort in that they indicate that when that time comes we will be ready to fight for our share of the consumer dollar.

I desire at this time to give thanks and my personal tribute to the members of the committees that have served in the preparation of the convention. I desire also to thank those of our corporate members who have contributed to the fabric exhibits that have made such an outstanding display in the foyer. We have had help and assistance from others, and particularly we have had help and cooperation from the national body.

I recall that in addressing the New York Section meeting after the Atlantic City Convention I stated that a convention was no longer a sectional job; it is just too big a thing for that. It requires the wholehearted cooperation of all sections, and we need to draw in, and have actually drawn in, members from all of our other sections, and we have had 100 per cent cooperation.

It is my pleasure now to call on and introduce to you a man who, in my opinion, was probably most responsible for this convention. We didn't have too much time, but the thought was expressed by him late in August. And with all the difficulties I think we have succeeded in a fair way. But nevertheless, the credit for the thinking, for the forward looking ideas, for the feeling that a victory convention should be held, for all of those conditions of leadership we should be thankful to our National President.

It is my pleasure, therefore, to introduce to you now our National President, William D. Appel, who will take over temporarily. (Applause)

* * * *

President Appel: Fellow Members, Distinguished Guests: I want to acknowledge the welcome that we have just had from Mr. Driscoll and the New York Section, and in doing that I want to tell you what has been involved in holding this meeting.

When travel restrictions were lifted about the 1st of October and when it became possible to tell something about the research that has been done in this country during the war, and when the curtain was to be lifted on the developments in the German textile industry during the war, it seemed that we should have a meeting, contrary to the decision of the Council earlier in the spring. I went to a number of members of the Association with that suggestion, and I was told that it was quite impossible to hold such a meeting, there wasn't time, that it took months to get the technical program together and make all the arrangements that were necessary. But one man gave me a different story. That was the Chairman of the New York Section, who you just heard speak. He said, "We have had a meeting, and it can be done, and we will do it."

In two months or so they have put on a convention here which is certainly going to be a great credit to the New York Section. I want you to know that they have done it in that very splendid way. (Applause)

Now I am going to turn the meeting back to a man who tells me that his only claim for distinction is that he was the first chairman of the New York Section. I will let you be the judge of that. I will turn the meeting now to P. J. Wood. (Applause)

* * * *

P. J. Wood: Fellow Members: It may be interesting at this point, since I was introduced as the first chairman of the New York Section, to make a few comparisons, or rather, one particular comparison. At the time I was chairman we had 55 members in the New York Section. Today I think we have nearer 1200. But I will say this, that in those days we had very often 100 per cent attendance at our meetings, which I don't think we have had ever since. Of course, it was a good deal easier to accomplish under those conditions.

The particular purpose of this meeting this evening is to honor our corporate members who have so loyally stood by us during the past years, many of them for long periods of years, and also to aquaint them with the work which they are making possible, research work. Our re-

search work in the minds of a great many people was something nebulous. I am glad to say it is becoming a little more clarified in these later years.

That reminds me of the young man who went to college, and when his course was finished he came back into his father's business. Of course, he came with all the vigor and vim that four years of college could give him. You know the old story, four years of loaf on father's dough; he was filled with it.

He said, "Father, we are going to reorganize this business entirely now. I have learned a lot of things in college, and we are going to do research work."

The old man, of course, didn't know much about it. He said, "Well, how are you going to set about it?"

The son said, "The first thing we have to do is get up a lot of statistics."

"What are statistics?" the father asked.

"Like this, for example: It has been estimated that if they took all the saxaphones in the United States and melted them down, they would make a piece of brass as high as the Woolworth Building."

The old man said, "I wish to heck they'd do it!" (Laughter)

. . . Mr. Wood then introduced a number of those at the head table . . .

In order that we may get to the serious part of the meeting, we are to hear now, particularly for the benefit of the corporate members, but equally for the benefit of all the membership, on the subject of "Textile Research of the A.A.T.C.C.", our President, William D. Appel (Applause)

President Appel: I think that what I will say will serve as a background for what you will see in the meetings and the exhibits later in the week. I hope that as many of you as can will go to the Research Committee meeting on Saturday, an open meeting. You will see there the research work of the Association in action.

THE TEXTILE RESEARCH OF THE A.A.T.C.C.

An Address to the Corporate Members

WM. D. APPEL

President, American Association of Textile Chemists and Colorists
Chief, Textiles Section, National Bureau of Standards

EVERYONE in the textile industry is aware of the tremendous effort put into the development of textiles to meet the rigorous requirements of modern warfare and of the important part played by the textile and allied chemical supply industries in the effort. Remarkably interesting new products and improved old products have resulted from the intensive researches of the Government and of private agencies. The application of these developments to non-military uses of textiles is an important part of the business of the industry today.

But what about tomorrow? According to Brigadier General Georges F. Doriot, Head of the Research and Planning Division of the Office of the Quartermaster General, there is not a single piece of quartermaster equipment now in use that would be any good if there ever were another war. Further developments in textiles for civilian uses may be expected too. Accordingly the industry must be self-sustained in science as well as in commerce to continue to maintain its independence. That it proposes to do so is shown by the numerous textile research institutes and foundations which have been created recently and by your interest in the textile research of the AATCC.

If you will look at the textile research of the AATCC with me tonight, you will see that it has a place of major importance in relation to these postwar developments. In concept, scope and objectives, the way it is carried out, and what it accomplishes, our work is essential to the industry and to the public.

OBJECTIVES

When the Association was organized in 1921, there were no generally recognized satisfactory methods for evaluating dyes, textile chemicals, and dyed and finished products. A research committee was created at the first meeting of the Council of the new Association to develop such methods. They were needed as a basis for a common understanding, a common language, between producers of textile chemicals, dyers, finishers, distributors, and the public. This has been the primary task of the research committee.

Of equal importance has been the research on the behavior of dyes, chemicals, fibers, yarns, and fabrics under the conditions of textile processing, undertaken by the committee as the need arose. Such subjects as mercerization of cotton, carbonization of wool, and vat printing pastes, have been studied intensively by well-trained scientists under the leadership of the Research Committee. The object has been to learn what takes place during processing and to show the influence of processing conditions on the results. The basic information is required by chemists and colorists for the intelligent operation of processes, the improvement of processes, and the development of new processes in the mill.

PROCEDURES

Subcommittees of the Research Committee are charged with the prosecution of particular projects. There are at present 19 active subcommittees, and 20 reference subcommittees which have completed their assignments and are retained for consultation. Much of the work is carried out in the laboritories of the members of these committees. Thus the extensive knowledge of the members is pooled, existing laboratory facilities are utilized, work is expedited, and cost is minimized. This procedure is especially effective for the developmen of test methods because the participating laboratories learn to use the methods as the work progresses and are ready to adopt them promptly when they are promulgated by the Association.

As the research activities grew in complexity and importance, some of them could no longer be carried out by members on a purely voluntary basis. Help had to be provided. The work of the Committee on Washfastness is an example. This Committee is undertaking a thorough study of what happens to dyed and printed cotton textiles in laundering, as a basis for improving laboratory accelerated washfastness testing. Forty-two selected fabrics were sent to 25 commercial and home laundries representative of the various local conditions throughout the United States. Each fabric is being laundered 30 times and sampled after each laundering. Over 31,000 swatches have to be marked for indentification and many thousands of color comparisons have to be made. This is being done by a capable research assistant employed by the Association to work in the laboratory of the chairman of the committee. Without her help the task would be too great for the committee to undertake. The cloth was contributed by some of our members and the laundries have given their services. I cannot name the numerous contributors now but the Association is most grateful to them for their help.

Other committees are given assistance by the Association's own laboratory which is maintained at the Lowell Textile Institute through the courtesy of that organization and its trustees. At present the

William D. Appel of the National Bureau of Standards, President of the A.A.T.C.C., speaking at the President's Corporate Membership Dinner. At the left are: Emmett J. Driscoll of Turner Halsey Co., Chairman of the New York Section, and P. J. Wood of Royce Chemical Co., a Past President of the A.A.T.C.C., who served as Toastmaster.

laboratory staff numbers 3, but it will have to be increased to meet the growing need for its services.

Still other committees have taken advantage of the facilities and leadership available in colleges and government laboratories. Research Associates have been maintained for particular projects at Brown University, the National Bureau of Standards, the University of Chattanooga, and Lowell Textile Institute. You will remember the effective work of Dr. Milton Harris as a research associate of the AATCC.

COORDINATION OF THE WORK

Coordination and guidance of the work of the Research Committee, its subcommittees, and the paid staff, numbering in the aggregate over 200 persons, has been the responsibility of the Chairman of the Research Committee. The success of the work is due in no small measure to the one man who has held this position from the beginning and who will, we hope, continue to hold it for many more years, Dr. Louis A. Olney.

During the past two years he has had the help of an Executive Committee on which I have served with four men who know what is needed and how to get it done, namely, past presidents Tom Smith and P. J. Wood, Bob Bonnar, and Leonard Little, the chairman.

On December 1, Dr. Harold Stiegler became your first full-time Director of Research. His broad and varied training and experience and his leadership will be felt soon all along the line.

ACCOMPLISHMENTS

The results of the research work of the Association need not be elaborated here. Merely to list the published reports requires six pages in the 1945 Year Book, and the descriptions of test methods require 111 pages. As you know, the methods are used in mill control, testing, and research laboratories throughout the country. Many of them have been adopted by the Federal Government, the American Society for Testing Materials, and the American Standards Association. Recently, they have been submitted by the American Standards Association for international consideration.

What has the work accomplished? Like the textile research of others, it has taken much time, effort, and money. It has often been discouraging or disappointing. It has led to no startling or revolutionary developments, no atomic bombs in the field of textiles. However, ask yourself the question Vice-President Henry Herrmann asked a year ago: if the test methods and standards and knowledge gained through this work disappeared over night, how long would it take individual mills—or groups of mills to reestablish these methods and standards for the regulation of their operations as an industry, and what would be the cost?

Perhaps even greater are the often unrecognized values that accrue from the stimulation and inspiration resulting from the work of our committees and staff. The specialized education and training of men for industry through service as research associates are important byproducts. Chemists and colorists gain fresh viewpoints, new ideas, and renewed energy for their regular duties through the work of the Association. The mills benefit, and the ability of the industry as a whole to meet competition from without is raised by an alert, informed, capable personnel. The large number of participants in the work and their wide distribution geographically and by specialization, distinguish the research of the Association from that of others.

RELATIONSHIP WITH OTHER ORGANIZATIONS

You will note that the work has been confined, for the most part, to the production of new tools (methods) and compilation of information (data) required by chemists and colorists. This is a job the Association is peculiarly fitted to do. Others have concerned themselves with scientific research of purely academic interest, with research involving large outlays in plant and machinery, and with confidential research for individual mills. The Association does not compete with them. On the contrary, it maintains cordial relations with such organizations. It helped establish the Textile Research Institute. It has worked closely with the Textile Foundation, the American Society for Testing Materials, the National Bureau of Standards, the U. S. Department of Agriculture, and the War and Navy Departments. It is associated with these and other organizations in the Inter-Society Council for Textile Research. It holds membership in the American Standards Association and in the Inter-Society Color Council. Scientists and technologists of all of these organizations are members of the AATCC and work on its Research Committee. Thus the Association has a particular service to perform in the field of textile research and is uniquely equipped through its membership and connections to do it.

RELATIONSHIP WITH OTHER ACTIVITIES OF THE ASSOCIATION

On the other hand, it should be clear that research is only one of the functions of the Association. Ours is a professional association of chemists and colorists. It has a well-rounded program. Its eight local sections blanket the eastern half of the United States. The meetings of the Sections and the annual general meetings bring the members knowledge of the latest developments in textile science and technology. The Proceedings, published in the American Dyestuff Reporter, come to every member every two weeks. The Year Book is a substantial volume containing in addition to membership lists and other information about the Association and its operations, an index of American-made dyes, a list of textile chemical specialties, committee reports, test methods, and references to textile literature, which are used by textile chemists and colorists in their daily work. The Personnel Ser-

vice which was started a year ago brings together prospective employees and employers having vacancies. It should be of increasing value to both individual and corporate members as its services become better known. The publication of a new Colour Index, which is the bible of both producers and users of dyes, is a major undertaking just started in cooperation with the British Society of Dyers and Colourists. It is a great satisfaction to be able to announce tonight that your old friend and mine, past president William H. Cady, will join the staff of the Association on a part-time basis to coordinate the work of those who will contribute to this important undertaking.

COST

These activities and services are completely financed from the dues of individual members. Dues have been held to $5.00 per year. The research, on the other hand, draws its support principally from the dues of corporate members. The present annual income for research is about $35,000. It is hoped that additional support from you will raise this figure to the $50,000 needed for the work ahead. This is but a fraction of the amounts being asked by others for textile research. Where can either individual or corporate members get so much for so little?

PROGRAM

Our program calls for the creation of new test methods and standards for the description of quality of textiles which are urgently needed by the industry and for the investigation of new processing materials, processes, and finished products. An illustration of an unexpected need for a new method came to the Association about a year ago. A test was needed for flammability of clothing which may be hazardous in use. Attention was focused on this problem because several small children were burned to death in different parts of the country when their clothing caught fire under conditions which were considered reasonable conditions of use. In California, legislation was passed to prevent such occurrences and a bill for the same purpose was introduced in Congress. A reliable and fair test was needed to make these laws effective. At the request of the National Retail Dry Goods Association, a committee on flammability was put to work. It will report its results at the Research Committee meeting Saturday morning and some of the work leading up to them will be described in an Intersectional Contest Paper Saturday afternoon.

Other subjects of current interest in our program include methods for the evaluation of water repellency of fabrics for outer clothing; atmospheric fading of acetate textiles; launderability of shrink-proofed woolens, stabilized rayons, and pigment prints; durability of fire, water, mildew, and moth resisting finishes in laundering, dry cleaning, light, heat, and weather. Recent demands for informative labeling of textiles with respect to such preformance characteristics emphasize the importance of the work to the industry. The interest of the Federal Trade Commission in these matters emphasize their importance to the public. An expansion of our program is necessary to fill these needs and to continue our recognized leadership in this field.

The first step in expanding our program was to provide a full-time director of research. That has been done. The second is to strengthen the Association's laboratory at Lowell. That is being done. A third step will be to select new projects and subcommittees to handle them. You are urged to suggest projects most deserving attention. The Subcommittees should be located throughout the sections of the Association with members near enough together to meet frequently. Funds permitting, research associates should be employed in qualified local institutions for the more effective prosecution of the projects.

CONCLUSION

This, in brief, is what your Association has done and is doing in textile research. Its research represents a coordinated, continuing effort to supply essential needs of chemists and colorists everywhere and through them to supply the industry and the public with the basis for a common understanding and mutual respect. In our effort, to do this, we hope for the continued interest and generous support of the Corporate Members.

* * * *

Mr. Wood: Thank you. I think we can all agree that President Appel has given us a very fine resume of the past work of the Association in the direction of research and a glance to the future. His address will appear in full, and I think it merits a second reading.

All this work, however, would be of no avail were the test methods not adopted either by the manufacturers or by the public. As far as adoption by the trade is concerned, we have distinct evidence that they are coming more and more into daily use. But we have rather meager information regarding their acceptance by the general public.

To speak for the general public — which is a many-headed monster—we have with us tonight a speaker who is going to talk to us on "The Consumer's Views on Textile Research." Maybe he can clarify our ideas as to the general acceptance or non-acceptance by the public.

Mr. Lew Hahn is our speaker, and he is

Lew Hahn, General Manager, National Retail Dry Goods Association, speaking at the Presidents' Corporate Membership Dinner.

the General Manager of the National Retail Dry Goods Association.

Mr. Hahn! (Applause)

Lew Hahn: Mr. Chairman and Ladies and Gentlemen: I always believe in starting right, if I may, with an audience, by making a frank confession. I found myself wondering when I was to come here tonight, and since I have been here, why I should be talking to you. I want to ask that before you have a chance to ask it. And I will try to answer it, if I may.

I have come to you for several reasons. The first and perhaps the most important one is that Charlie Dorn asked me to. We know Charlie Dorn at the National Retail Dry Goods Association as chairman of what we call our Technical Committee, which has done a lot of good work in connection with some of the problems that hook up with the work you are doing. I have never known Charlie ever to refuse to do anything I asked him to do, so when he asked me to come and talk with you I said of course I would.

My second reason was that when he asked me, this meeting was a long time in the future. I don't know whether you fellows feel the way I do, but it is always so easy to do anything when the doing of it lies a long way ahead.

But perhaps the third reason is most interesting of all. I said to myself that really, here was a chance for me to get out in big society. Here I have been devoting

the last 30 or 35 years to working with retailers and talking to retailers and other businessmen, and now I have a chance to talk to a group of real scientists. Scientists, that is what you are. So I thought it was too good an opportunity to be missed.

THE CONSUMER'S VIEWS ON TEXTILE RESEARCH

LEW HAHN

General Manager, National Retail Dry Goods Association

I SUPPOSE that since that day last August, when Japan experienced that slight concussion which caused the Japanese people to be "so sorry" and try to be good citizens, no ham speaker ever has pointed up his remarks in any other way but with a reference to the atomic bomb. And I am going to do the same thing. But I hasten to say I don't know a thing about the atomic bomb.

I do think, however, that it points a moral for you and for us, and that moral is this: The bomb was developed by scientists, and the man who works in scientific research, works in a lawless world. I think it perfectly obvious that you can't make laws to govern a thing which never existed. As a result the atomic bomb was born into a world which was lawless. Now every nation on earth is in a state of consternation because there are no laws to govern the atomic bomb.

I think that while you men who are following your scientific pursuits in this great textile field may perhaps have had nothing directly or actively to do with the development of the atomic bomb. Nevertheless you too work in a lawless world. As a matter of fact, the scientist couldn't work in any other world unless he had an area which was unrestricted, which was free, and into which he could move in any direction he may see fit, otherwise his research work would be utterly worthless.

The scientist is a pioneer; he breaks new ground; he develops things which never existed before. You are doing that in the textile field.

It seems to me that the pioneer, the man who from choice goes out into the wilderness and establishes his residence perhaps 500 or 1000 miles from any other human being, can live without law, but if he is a realist he recognizes the time will soon come when others will come to that same place, other interests will be involved and laws be developed.

I think that in this great field in which you men are acquitting yourselves so aptly that while you work without restrictions other than the natural laws, you must be wise enough to recognize that the things you do are going to be followed up shortly with other laws. The things that you produce, things which you develop, when they get to the production stage and become merchandise, become subject to laws which restrict them and restrict those of us who deal with them. Out of the research work that you men do may come a lovely, lustrous fabric, but when the woman who robes herself in that finds that in fact she has wrapped herself in a shroud of death, that is important. It seems to me that is one of the things, one of the great laws which you men who work in this unfettered field must recognize as following closely upon your heels.

The most important law of all is a law not appearing upon the statute books, but it is a law that the things we do must be done in the interest of that great American consumer. I think we must recognize that behind all our activities as the purpose, as the motive, as the enabling fact, lies the American consumer. The American people are a great people. They have demonstrated their greatness in a great many ways. But I believe that in nothing are the American people quite so great as in their role as consumers. It is due to the eager willingness of the American public, the American consumer, to adopt new ideas, to try out new things, that you and we and all of us are able to go on and do the things which we do and develop our livelihood and build our business. Whatever we do, it seems to me, must be done within the framework of the consumer's need.

GREAT MORAL LAW

But there is more than that great moral law which we must observe, because there are actually specific statutes of the state and the nation that govern these things. Here lately we have been hearing, because of a decision of the United States Court of Appeals, a very ominous phrase, that of implied warranty. There have been a number of instances in the past in which the users of things which are produced by our industries and sold by our retail stores have been hurt. Some of those cases have come to court. The only case I know of that went to the highest court, except for the Supreme Court of the United States, was a case which came up in Washington not so very long ago, in which a woman suffered very painful injuries from a lounge robe which ignited when she lighted a cigarette. In that case the retailer suffered a very heavy penalty assessed by the lower court. The case was carried to the United States Circuit Court of Appeals, and that court affirmed the judgment of the lower court, upon the basis that the retailer was supposed to know his merchandise; that when a consumer came to him and asked for something for a specific purpose and he made the sale, the assumption was that that thing was fit for the purpose for which the consumer intended to use it. So there was, in fact, an implied warranty.

Now, I don't know how far this doctrine of implied warranty is going to go. It would seem to me that if the court could hold that when the consumer asked for a lounge robe and the store sold it, the implied warranty was there, that it was fit for use as a lounge robe—if that can be held that way, so it can go back through all the various stages of production. In other words, when the buyer for that store—and don't take my word for this, because I am a layman, but it seems reasonable that when the buyer for the store went to the manufacturer and said, "I want some lounge robes," and the manufacturer sold those lounge robes, there must, I believe, have been an implied warranty to the buyer of the store that the robes were fit for use as lounge robes. If that should prove a fact, then I can well imagine that the manufacturer in turn would be liable not only for the penalty assessed against the retailer, the damages to the injured consumer, but possibly also for all the legal expenses and all of the loss of good will that the retailer might have suffered.

GREAT RESPONSIBILITY

I believe that you men have great responsibility in that connection. We in the retail field are very eager to have you develop new textiles that we can sell. But things have developed so rapidly today that I don't believe any retailer knows what he is selling. There was a time when there were just a few natural staple fibers —wool, cotton, linen and silk. The retailers used to pride themselves on their knowledge of their merchandise. But I think today the average retailer is buying goods which are unknown to him, about which he knows comparatively little, and he sells them to consumers who know even less. That, I submit to you, may develop into an intolerable condition.

I have known of your organization. I

listened to the splendid address that President Appel just made. I am conscious of the fine research work which you are doing. I know that you believe in testing. I know that you, too, believe in the protection of the public. But it seems to me that the thing which is most needed in connection with testing is to develop tests which are more closely related to the use experience of the merchandise when it gets into the hands of the consumer.

In every line of special work we are apt to build up a special vocabulary. We adopt a jargon. We use terms which are very significant and expressive to us, but which the uninitiated cannot understand. I think if we had more tests which closely approximated the conditions of use when the goods got into the hands of the final consumer we would all be better off, and certainly the consumer would be immeasurably better off.

It occurs to me that some years ago I wanted to buy an oil burner for my home. Like a cautious man I made inquiries until I was convinced I had spotted the burner best suited to my purpose. Then I called the representatives of that company and said I wanted an oil burner, but I wanted them to get cut to my home and look over my heating equipment, and then tell me whether the burner would efficiently heat my home.

They went to Ridgewood, New Jersey, where I live, and said, "Our burner will deliver so-many-thousand BTUs to your boiler."

I said, "I wouldn't know a BTU if I fell over it. The only thing I want to know is if in the coldest weather we can expect, where my home is located, to have the burner heat the house to 70 or 72 degrees." It took the longest while before those folks were willing to talk in the terms I wanted them to, that I could understand, and guarantee that the burner would serve that purpose.

In testing we are familiar with abrasive tests and the tests for tensile strength, and we know all about the Fade-Ometer and all that sort of thing, but the public doesn't. It seems to me we must do something to bring about a condition where we are understood by the ultimate consumer, and I think in doing that we, too, will better come to understand the consuming public.

ALL CONSUMERS

I didn't know the subject on which I was to be asked to speak tonight until I saw it in your program, or else I should have immediately disavowed any liability to speak for the consumer. I don't believe anybody can speak for the consumer except the consumer himself, and the consumers are, as the chairman said, many-headed monsters, if you will. There are as many consumers in our industries as out of them, because we are all consumers. But I do think it stands to reason that if we have the good of the American public in mind in all that we do—we are ourselves a part of that public, and we can't neglect our own good in doing that; if we make the interest of the public paramount, if we recognize there never was a field for business opportunity, there never was an opportunity for enterprise except that it be based upon the services to the public, and that the things which we do are good only as far as they are good for the public, and by intelligently serving the public, we will open a great field for ourselves, for activity for business, for profit.

Then if we recognize the need in this great changing field for informative labeling which really informs—I don't believe we are near that time, and perhaps it will never come when a manufacturer of bed sheets, for example, will be able to guarantee to the consumer that his bed sheet can be used for a certain length of time and laundered a curtain a number of times, because of the tremendous difference under which the sheets are used and the differences that occur in the laundering, and that sort of thing; I don't believe we are close to that yet. But I do believe that we could tell the public in terms which would enable them to make a reasonable interpretation of the thing which we may be able to guarantee, so that they can apply it to their own need, their own circumstances, their own condition.

I don't believe we can devote too much thought to the way in which this textile industry is changing. We read things in the magazines; we read about a new process whereby cloth is made without weaving. We hear about great machines which swallow raw cotton at one end and turn out a finished fabric at the other. The consumer reads about fabrics which will be seamed together with a hot iron instead of being sewn. We hear that we will soon be arrayed in garments made out of peanut shells or chewing gum, or something of that kind. It has gotten so that whenever I pass a meadow now in which there may be a poor, lonely, distracted cow and it moos, I wonder if the garment I wear consists of something the animal produces.

There was a time when there were textiles we knew, but we don't know them anymore. And unless a man thoroughly tests a thing out, unless he is convinced that the thing which he has had the genius to produce, combines safety, economy and use and tends to a lower cost of living, the thing produced isn't worth a lot. (Applause)

* * * *

Mr. Wood: Thank you, Mr. Hahn, for that very inspiring address, and particularly in view of the fact that you didn't know what your subject was to be when you came here; I think it is rather remarkable.

When you opened by saying you were a little in doubt as to whether you should be here at all, I was reminded of a convention we held some time ago at which I was the toastmaster. The mayor of the city, a very well-known mayor, came to greet the Association. He came in quite late, and they put him beside me. His first remark to me after acknowledging the introduction was, "Who are these guys?" (Laughter)

We have had three very interesting talks, gentlemen, and we have finished in good time. You still have a little of the evening to enjoy yourselves in other ways. I will remind you of the remark that my old barber used to say to me when I was leaving. He happened to learn that I once taught school, and he always called me "Profess." He would say, "Well, Profess, keep sober!" (Laughter and applause)

. . . Thereupon the meeting adjourned.

CALENDAR OF COMING EVENTS

NORTHERN NEW ENGLAND SECTION:
Meetings: March 22, May 17.
Outing: June 7

RHODE ISLAND SECTION:
Meetings: March 22, April 26.
(Providence Engineering Society Hall, 195 Angell Street, Providence, R. I.)

PHILADELPHIA SECTION:
Meetings: March 1, April 12, May 24.

NEW YORK SECTION:
Meetings: March 29, May 3.
(Downtown Athletic Club, 19 West St., New York City.)

SUB-COMMITTEES:
Meeting: April 4.
(Hotel Commodore, New York City. Chairmen of sub-committees who wish to hold meetings should notify the chairman of the Research Committee.)

COUNCIL:
Meeting: April 5.
(Hotel Commodore, New York City.)

RESEARCH COMMITTEE:
Meeting: April 5.
(Hotel Commodore, New York City.)

SOUTH CENTRAL SECTION:
Meeting: April 13

NATIONAL CONVENTION:
Silver Anniversary Convention: December 12, 13 and 14.
(Hotel Statler, Boston, Mass.)

ANNUAL BANQUET SESSION

Pennsylvania Hotel, New York City, January 5, 1946

ROBERT W. PHILIP

Toastmaster

EMMETT J. DRISCOLL: Good evening, ladies and gentlemen, and greetings.

I trust that you all have enjoyed yourselves and that you have been stimulated by our Victory Convention. Without further ado, for we have a long program, I want to introduce to you our Master of Ceremonies, a gentleman who has been connected with this organization for some 15 years as chairman of a section, as a councilor, and as a close friend of all of us who know him, and most of us do. He is now president of the Callaway Institute.

It is my pleasure to introduce to you our Master of Ceremonies, Robert Philip of the Southeastern Section. (Applause.) This is still a national convention. Bob, you carry on from here. (Applause.)

* * * *

Toastmaster Philip: I first want to thank Mr. Driscoll for identifying me to you. If he hadn't done it, I might have been in the fix of the fellow down home who was toastmaster at an occasion like this. He began introducing the important people of the program and became so enraptured of his own eloquence that he forgot himself and talked too long in introducing the speaker of the evening until presently some fellow in the back of the hall hopped up and said, "We know who the speaker is, but who the hell are you?" (Laughter.)

I told Miss Bronner this afternoon about an old Negro woman in our part of the country who had an ideal philosophy of life. Somebody asked her once how she was able to get through the day and still be cheerful when night-time came. She said, "Well, I tell you, when I works, I works hard. When I sits, I sits loose. When I worries, I go to sleep."

I am asking you folks to just sit loose now and enjoy this program, because while the seriousness of the convention definitely isn't over, the working part is, and from this point on we are to try to provide the dessert to what I believe has been a thoroughly stimulating and profitable convention for everybody.

I should like at this time, on behalf of the visiting firemen that I represent, to express the deep appreciation of all of the visitors to the New York Section and the individuals involved for having provided the means of what I believe is the best convention this Association has had.

It might interest you to know that there have been over 1350 registrations at this convention, which I believe sets a record in the 25 years of our history.

More than that, and as a means of achieving one of the objectives of this Association, in addition to the registered membership, we have had more than 2500 interested visitors, over and above the people who were registered at the convention.

I think that reflects a definite tribute to the recognition of the importance of the work of this organization, when 2500 interested observers would come to see the splendid exhibit that the Association had here and to hear the papers. It is a far cry from the time in 1921 that a small group of people put into effect a dream for the formation of this organization.

While I am on that subject, I don't want to overlook the opportunity of paying a tribute to and extending thanks and congratulations to the individuals who have been so instrumental in making this convention the success that it has been.

. . . Mr. Philip then referred to the Convention Committee. . .

Those people have been our hosts, and I think we all owe, and are very glad to give them a word of thanks for their hospitality and their arrangements that have made this convention so successful.

I didn't know until Emmett Driscoll made his address of welcome on Thursday night why I was chosen for this particular function, but, in welcoming you, Mr. Driscoll stated that the growth of this organization had been so amazingly great that it had outgrown the capacity of one Section to provide for its national convention. I certainly think that is true, and I suspect that I was chosen here in order to represent the rough element in the organization. On behalf of the rough element, as is reflected by the Southeastern Section of which I am a member, I appreciate the privilege of being here.

I don't think we should proceed without notice, first, of the fact that this is a Victory Convention in fact. I think it is fine and splendid that we have back among us so many of our former members who, for the past few years, have been wearing a uniform and who now are wearing the lapel button indicating honorable discharge. I think we should be gratified that those who have come back are with us, and I think we should welcome them back to participation in the affairs of the Association.

I should also like to recognize the absence of a number of the real bulwarks in the affairs of this Association. I can't name them all, of course, but I should like to take special note of the fact that Mr. William Cady, Mr. Alban Eavanson and Mr. Charles Seibert are not with us tonight. It doesn't seem like a convention of the A.A.T.C.C. without them and other fine gentlemen who have done so much toward making the organization what it is. I wanted to recognize our appreciation of their efforts and express our regret that they can't be here.

When you look over a crowd like this, as I can now from this vantage point, there are a lot of people that we used to see who are not here now. There are a great many new faces, that is, new to an individual like myself, but the nucleus of the organization is still with us.

. . . Mr. Philip next introduced those at the head table. . . .

The next order of business is the recognition of the National Chairman of the Intersectional Contest, which was held this afternoon, Kenneth H. Barnard, who will now announce the winners of this year's Intersectional Contest.

Mr. Barnard! (Applause.)

* * * *

INTERSECTIONAL CONTEST

Kenneth H. Barnard: This contest this year is the sixth in the series, of which we have had one annually each year. It seems to me that they get better as the years go along, and I think this is one of the best we have had, both from the standpoint of the audience, which was very large and attentive, and from the standpoint of the papers which are excellent, as were the speakers who gave them.

The winner this year is not only the winner of the first place, but is the first one to qualify as first place winner

AMONG THOSE PRESENT AT THE ANNUAL BANQUET

three times, not in a row, but three times. The Rhode Island Section won the first prize. (Applause.)

Their paper, on the subject of "Factors which Cause or Prevent Agglomeration of Pigment Particles," was presented by Raymond Jacoby of the Ciba Company.

Although I am an adopted New Yorker, I still have a fondness for New England, and what I am going to say next I hope you will take with this in mind. The second prize goes to what you might call "always a bridesmaid but never a bride." The second prize winner is the Northern New England Section. This is the fourth time they have won the second prize. (Applause.)

The paper was very ably presented by Dr. Kenneth P. Monroe of Fabric Research Laboratories, Inc., and the subject was, "The Mechanics of Zone Control in Resin Finishing."

The third prize goes to the New York Section for the paper presented by Charles W. Dorn of J. C. Penney Co. on "Evaluation of Fabrics as to their Flammability." (Applause.)

I want to add in closing that the papers were very close, and those that didn't get a prize were so near to it that there was no fun in it. The judges had a hard time deciding on the winners. Thank you very much. (Applause.)

* * * *

Toastmaster Philip: Thank you, Mr. Barnard.

I am certain that the members of the Sections whose papers were recognized by the awards are thrilled, and I think I can say that it is a tough job being a judge in the Intersectional Contest when the papers are grouped as closely as they were this time. An associate of mine has a saying I would like to pass on to you.

Most of the people in this organization are at least labeled as scientists. Fuller Callaway says that his observation is that a scientist just loves to be pregnant but hates like the dickens to bear the child. I think the Intersectional Contest is a good medium for drawing out the results of the technical work that is going on throughout this industry.

I think it does another thing. There is a story down home of the old farmer who was approached by a high pressure book salesman. The book salesman drove alongside and caught him at the end of a row where he was plowing and started in his sales talk on selling this farmer a book on how to farm. The farmer listened to him. The boy was fresh out of college and was just repeating what the sales manager had told him about how to sell this book. He ran out of his prepared sales talk and finally he said, "Well, don't you want to buy this book on how to farm?"

The farmer said, "How much is it?"

And the book salesman said, "It is $5 a copy."

"No," the farmer said, "I don't think I had better pay you $5 for a book that tells me how to farm. I ain't farming half as good as I know how to now." (Laughter.)

I think that is a prevalent trait among us, and the occasion of our Intersectional papers, as presented at our national meetings, sends all of us home with stimulation and inspiration to farm a little bit better than we have been doing, and if it does that, I think it is thoroughly justified.

OLNEY MEDAL AWARD

From this point on in the program, we will devote ourselves to a most happy ceremony, which, as most of you know, I am sure, is the award of the Olney Medal. I know that a great many of you may not be familiar with what the Olney Medal is, and what it represents, and it may be helpful, before proceeding with the established program, to tell you something about it. In order to do that, I believe I can best read the directive given the committee charged with the responsibility of selecting the recipient for the Olney Medal.

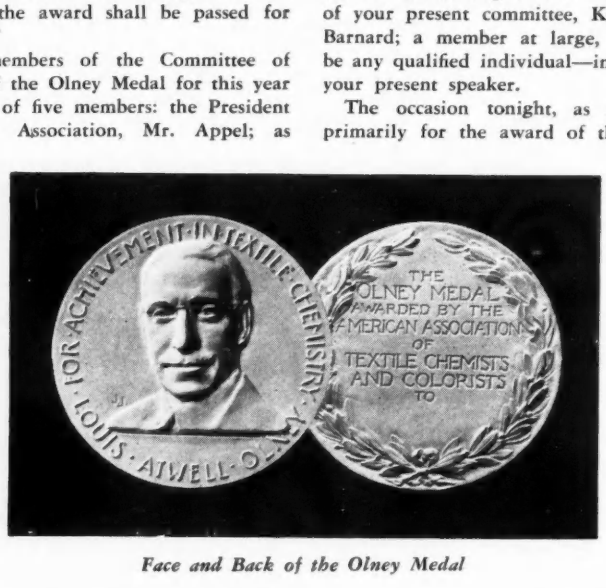
"The Olney Medal was endowed by the Howes Publishing Company, first, to encourage and to afford public recognition of outstanding achievement in or contribution to the field of textile chemistry; and second, as a testimonial to Dr. Louis A. Olney, in recognition of his lifetime of devotion and multitudinous contributions to this field. The Olney Medal is awarded for outstanding achievement in the field of textile chemistry, which is understood to include the development of chemical agents or processes used in the manufacture of textiles or methods for their evaluation.

"In making awards, the committee need not be confined to the consideration of any one specific achievement or contribution, but may, in its discretion, consider the sum total of various and continued contributions to the field, no matter of how long duration.

"The Olney Medal shall be awarded annually or at such longer intervals as the Committee of Awards may elect. The award shall be made only by unanimous vote of the committee. In the event that no unanimous agreement is reached, the award shall be passed for the year."

The members of the Committee of Award of the Olney Medal for this year consisted of five members: the President of your Association, Mr. Appel; as stipulated, a member of the faculty of an educational institution awarding degrees in chemistry—in this case it was Dr. Harvey A. Neville; an employee of a concern manufacturing chemical products used in textile wet processing—in the case of your present committee, Charles Seibert; an employee of a concern manufacturing textiles—in the case of your present committee, Kenneth H. Barnard; a member at large, who may be any qualified individual—in this case, your present speaker.

The occasion tonight, as I said, is primarily for the award of this medal.



Face and Back of the Olney Medal

The casting of the characters in the performance, I think, was perfect. It has been necessary to make some substitutions in the dramatis personae, but the substitutions are just as good as the originals. It is now my distinct honor and privilege to present to you the next speaker who will discuss the medalist for this year from the standpoint of his achievements as a scientist. That speaker is the head of the Department of Chemistry and Chemical Engineering and of the Institute of Research at Lehigh Universiy, a member of our own organization for a number of years; in his own right a distinguished and respected scientist, Dr. Harvey A. Neville, whom you will hear at this time.

Dr. Neville! (Applause.)

* * * *

Dr. Harvey A. Neville: Mr. Toastmaster, Members of the Association, Ladies and Gentlemen: In this serious ceremony to which our friend from the Deep South has referred, it appears to be my role to give away the bride.

. . . Dr. Neville then presented his prepared paper. . . (Applause.)

Harvey A. Neville of the Department of Chemistry and Chemical Engineering at Lehigh University speaking during the ceremonies accompanying the award of the Olney Medal.

THE MEDALIST, THE SCIENTIST

HARVEY A. NEVILLE

THE ideals, motives and degree of civilization of a people may be judged by the type of individual and accomplishment which that people chooses to honor. In ancient China and in classic Greece highest honors were given to their philosophers and teachers; in the present age, Sweden awards the Nobel prizes for achievement in literature, science, and for the advancement of peace. Leadership and attainment in every field of commendable activity, no doubt, deserve due recognition and reward. It is, however, particularly appropriate to present interest and to the urgent needs of the future that great honor, commendation, and encouragement be given widely now for distinguished service in scientific research, for the extension of fundamental knowledge and its applications to useful arts.

In Dr. Milton Harris, the scientist whom we have chosen to honor this evening as the Olney Medalist, we find a man of eminent accomplishment in this field.

We honor and commend him not for the possession, to an unusual degree, of technical skill, scientific knowledge, intellectual ability, and capacity for leadership. All of these he undoubtedly has, but he might have kept them hidden or have dissipated them in useless activities. We honor him primarily for the very effective utilization of his splendid talents in the service of science and in the advancement of textile technology. We honor him for his unselfish devotion to the interests of science and the welfare of our country, for his untiring efforts in seeking to advance these interests, and for the contagious enthusiasm with which he has infected many others. Few people are immune to the germ of science—*the streptococcus scientificus researchi*—which he spreads. There is no vaccine as a preventive and no specific as a cure; his contagion can only be worked off in the laboratory, followed by rest and recreation, and is subject to frequent recurrence.

The scientific publications of Dr. Harris and his co-workers now number more than seventy, extending over the past fifteen years. It is indeed remarkable that one who is yet so relatively young can have put so much of original value into the records of science. The fact, however, attests better than words the continuing energy, efficiency and imagination for work with which he is supplied or which, more probably, he generates spontaneously.

It would require too long here merely to read the titles of his papers, and many present are also well acquainted with their contents. From his first article, which constituted his doctorate thesis at Yale, to his latest, these papers have dealt with the chemistry and physics of textile materials and processes.

The majority of his investigations have been concerned with the chemical composition and reactions of the protein fibers, wool and silk. The broadening of his attack on wool is clearly reflected in the evolution of the title of his advisory committee representing this association when Dr. Harris was your research associate at the National Bureau of Standards from 1931 to 1938. This group, organized as the "Committee on Wool Scouring," soon had its title changed to the "Committee on the Action of Alkalies on Wool" and finally to the "Sub-Committee on the Chemistry of Wool."

In addition to his very thorough studies of wool and silk, Dr. Harris has extended his research to cellulose and its derivatives and nylon. While primarily interested in the chemical constitution of these substances, he has conducted numerous studies of the physical and mechanical characteristics of their fibers.

Laboratory studies on the behavior of textile materials under practical conditions represent an important part of the contributions of Dr. Harris. These give consideration to such effects as alkali damage and its detection, adsorption, carbonizing, dyeing, elasticity, enzyme action, felting, shrinking, surface-electrical charge, thermal conduction, and ultraviolet absorption.

It must be admitted that it is too early to evaluate fully the significance and importance of the contributions of the medalist to science in general or to textile chemistry in particular. What may appear today to be an isolated observation of only academic interest may be the key to a great technical development of the future. Scientific research is a national asset, comparable in importance to the natural resources of a country. It is our clear duty to stimulate the one while conserving the other, and to learn to utilize both most effectively.

The impression must not be left that the services of Dr. Harris to the advancement of textile chemistry have been limited to his activities in the research lab-

oratory. He has been responsible in large measure for the success of the Textile Section conferences at Gibson Island and served as chairman of that group for the first several years. He has always given his time and energy very liberally to the interests of the textile industry through many public addresses to organized groups and by private advice or information to individuals. He contributed important services during the war to several government agencies as chairman or member of committees responsible for textile materials or problems.

Finally, it may be noted that the stipulations for the award of the Olney Medal, established by Mr. Howes, might well have been drawn with the present medalist in mind, so accurately do they describe his qualifications. The Committee of Award, therefore, had no hesitation in selecting Dr. Milton Harris as worthy to follow Dr. Olney, the first recipient of this honor.

* * * *

Toastmaster Philip: Thank You, Dr. Neville.

The program provided that the next spot would be a talk on the medalist as a man, to be presented by that grand person Alban Eavenson. Unhappily for us, it was not possible for Mr. Eavenson to be here, and I know that his regret over his inability to come is heightened by the fact that it deprived him of the pleasure and satisfaction of speaking to you on the subject of "The Medalist, the Man." In Mr. Eavenson's unavoidable absence, we have asked Dr. Neville to double in brass and again speak to you. I now present Dr. Neville, discussing the subject of "The Medalist, the Man."

Dr. Neville! (Applause.)

* * * *

Dr. Neville: I apologize for appearing so often on this program, particularly on the same subject. I would like to talk about somebody else on this occasion.

No one regrets more than I do Mr. Eavenson's inability to be here. I know that he has followed with the greatest interest the career of the subject of our remarks this evening, and I know that he would take great pride in giving this medal to Milton Harris. I am sure that Milton Harris, himself, counts as one of his greatest privileges the continuing interest and encouragement which Mr. Eavenson has given him throughout his career.

Frankly, Mr. Eavenson and I got together for a little collusion, because we didn't want to contradict each other in our remarks. We prepared an outline of what we called "An Obituary for Milton Harris." (Laughter.) We called it an obituary not because we are going to bury him, but it is the same type of literary effort, in which you choose, you know, what you want to say, and you are not really concerned with the police record, or the drinking habits, or whether or not the man beats his wife.

This is a bare outline, and I think Mr. Eavenson intended to fill it in in his inimitable fashion with remarks which would have charmed you and made you happy to be here, and it would probably have convinced the medalist that he really deserves this award. (Laughter.) Mr. Eavenson would have said then:

THE MEDALIST, THE MAN

IT IS difficult, if not impossible, to distinguish between Milton Harris, the man and Milton Harris, the scientist. The same qualities of enthusiasm, friendliness and courage which have contributed to his success as a scientist have likewise characterized his relationships with his fellow men and define his character as a man.

Probably his most important personal characteristic lies in his ability to develop the loyalty of his associates, stimulating and bringing out their best abilities, thus multiplying his productive ability.

He has unusual ability to bring together the scientific and the applied interests of the textile industry, being equally at home in a discussion of some abstruse research problem and in an argument with practical mill men on the method of the introduction and operation of a process.

He has done much to overcome the apathy of the textile industry toward research and has introduced textile industry to the policy of the open door, on the principle that a closed door shuts out more than it keeps in.

He has always shared honor with his associates and has always insisted that due credit be given to the men who have worked with him. Thus, it is easily seen why his associates are so loyal to him and so convinced that he has their best interests at heart. Lasting loyalty must be a two-way process.

The kindly, lovable disposition of Milton Harris has enabled him to make a great number of friends in all walks of life. In his friendly relationships with people he makes no distinction between those of high position and those in modest circumstances.

The people who hold him in highest esteem are those who have had the opportunity to know him best. This is an important test of any man's real character.

Knowing the subject of these remarks as well as I do, I believe he is pleased to receive this medal not so much as a compliment to himself, not so much as a reward for his personal contribution, but rather as a recognition of accomplishment which he can share with all the members of his group who have had a part in this work.

Thank you. (Applause.)

* * * *

Toastmaster Philip: Thank you again, Dr. Neville.

Now it is a very high privilege to present to you the next speaker. I suppose as we all go through life, we are inclined to count the blessings that come to us and the more experienced we are, the more we realize the real value of the experiences that contribute to the greater fullness of our lives.

The Olney Award, as I read to you a while ago, was set up, first, to recognize outstanding contributions to the field of textile chemistry, but secondly, and equally important, to pay tribute to a man. The Award Committee, whom I identified a while ago, unanimously and unhesitatingly selected as the first recipient of that award Dr. Louis Atwill Olney himself, and now it is my great pleasure to present Dr. Olney to you for the purpose of presenting that award, which was established in his honor, to Milton Harris.

Dr. Olney! (Applause.)

* * * *

Dr. Louis A. Olney: Mr. Toastmaster: Mr. A. P. Howes, the President of the Howes Publishing Company, whose name has already been mentioned, was scheduled to appear on the program this evening, but unfortunately he is unable to be here, and he has asked me to act for him. Professor Neville has already participated in an account of the qualifications and accomplishments of Dr. Harris, and I need add but little. However, I do look back with great pleasure to the period when Dr. Harris and I were associated in the work of our Research Committee.

For a number of years he served as one of our Research Associates, and I am sure we are all proud to at least think, and I really can say believe, that this work with us was one of the important stepping stones in his success and his many later accomplishments.

PRESENTATION OF THE MEDAL

Dr. Louis A. Olney, First Olney Medalist, presenting the Second Olney Medal to Dr. Milton Harris. At left, looking on, are Emmett J. Driscoll, Chairman of the New York Section, and Robert W. Philip, Toastmaster.

With the medal goes a citation, and this citation, I am sure, represents not only the sentiments of the Award Committee, but also of the members of our Association, and it reads as follows:

"Milton Harris, versatile and distinguished scientist, stimulating associate, and loyal friend—for your many valuable contributions to science and for your services in the advancement of textile industry, we take great pleasure in awarding you the Olney Medal of the American Association of Textile Chemists and Colorists.

"While this award is in recognition of your past achievements, it is given with the confident expectation that your future career in this field will equally fulfill its promise and bring continued pride to the Association which honors you upon this occasion."

As much as I regret Mr. Howes' absence this evening, it is nevertheless a great pleasure to present this medal. And now, Dr. Harris, I wish to express personally, and I am sure there goes with it every member's wish, that you have many successful and happy years.

. . . The audience arose and applauded. . . .

* * * *

Toastmaster Philip: Thank you, Dr. Olney.

Dr. Neville and Dr. Olney both referred to the recipient's versatility. Without attempting to gild the lily, I should like to add one more thought. He is the only man I have ever known who could spend the morning in such a profound subject as electrophoresis and go out that afternoon and trim the devil out of you on the golf course. (Applause.)

There are two things I would like to say. One is that somebody said once if all the after-dinner speakers at all of the banquets could be laid end to end, wouldn't it be a grand thing. (Laughter.)

The other thing is a lesson my father taught me years ago. He said that there are three things a man should not try to do. The first was to try to climb a tree that was leaning toward him. The second was to try to kiss a girl who was leaning away from him. The third was to try to live up to the things that after-dinner speakers said about you. (Laughter.)

It is my privilege now to present the recipient of the honors that have been so well bestowed and expressed tonight, the Olney Medalist of this year, Dr. Milton Harris.

. . . The audience arose and applauded.

* * * *

Dr. Harris: It is with deep appreciation and humility that I accept the honor bestowed on me with this Award; appreciation, because one of the rewards which is most dear to a worker in science is the respect of his colleagues; humility, because in accepting this Award, I recognize it as a tribute to the efforts of many. Tonight, I consider it a great privilege to publicly acknowledge those efforts, and in particular, I should like to express my sincerest appreciation to the following:

To Professor Olney, in whose honor this Award is made, who, fifteen years ago, convinced me that I should go to the National Bureau of Standards as a research associate for the A.A.T.C.C., for helping to steer me into a field of work that has been so exciting and fruitful;

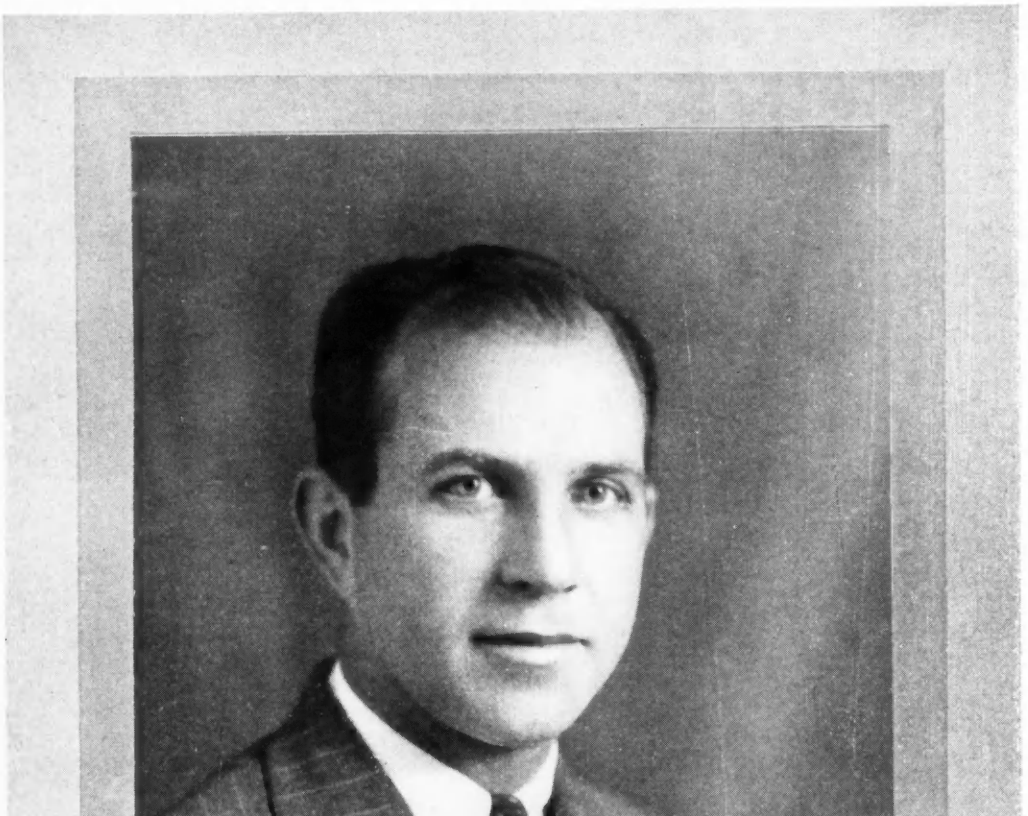
To this Association which sponsored the work from 1931 to 1937, to the National Bureau of Standards and particularly to Mr. Appel, our president, and to the Textile Foundation which carried on the work from 1937 to 1945, for the privilege of having been associated with this work;

To a great and good friend, Mr. Alban Eavenson, Chairman of our first research committee, for his leadership which always proved of inestimable value, and for his completely sincere and unselfish efforts and interest which has always been a source of great inspiration;

And finally to my many collaborators, as grand a group as it has ever been anyone's privilege to have; for their cooperation, untiring efforts and many scientific contributions which are truly reflected in this Award.

* * * *

Dr. Harris then presented his prepared paper, following which the audience again arose and applauded.



MILTON HARRIS, Ph.D.
Second Olney Medalist
Awarded January 5, 1946

Address of the Medalist—

The Future of INDUSTRIAL TEXTILE RESEARCH*

MILTON HARRIS
Olney Medalist, 1945

THERE is great unrest in the textile industry of today. Considering the complexities of national and international economics, as well as the normal complexities inherent in the industry itself, it would be foolhardy to attempt to evaluate this situation in terms of a few simple parameters. Recent technological trends, however, have contributed to the present state of affairs, and it is this very limited phase of the problem that I should like to consider this evening.

In what way has technology contributed to this unrest? Part of it stems from the fact that the apparently unassailable economic position occupied by cotton and wool a few years ago has now been seriously challenged, this challenge being manifested in the ever increasing rate of synthetic fiber production. In recent years, this has been recognized in symposia and conferences and in technical publications under such designations as "the battle of the fibers." In the not too distant past, mills were strictly speaking wool mills, or cotton mills, or silk mills, and while this situation still exists to some extent the rapidity with which many mills are broadening their interests in different fibers and have become textile mills in a broad sense has caused many management to cast an anxious eye to the future. And then there is still another contributing factor—the exictement aroused by such outstanding scientific achievements as those in the field of electronics, aviation, the development of radar—and most of all, the atomic bomb—all have stirred the imagination of our industry to the possibilities of further scientific developments in the field of textiles.

Finally, there is a certain unrest which exists more in the form of confusion, and has arisen from recent attempts to popularize and promote science and research in the textile as well as in other industries. While most of these attempts have been sincere, the manner in which some have been presented has left many with a feeling of the "omnipotence of science" or the "indispensability of science for the future of the textile industry", or that "science is magic". Certainly none of these is true, and it should not be expected that research can or will cure all of the major ills of the industry or solve its crises; it can, however, become a powerful adjunct to sound management and sound production, and all of these combined will procide the foundation for sound progress in the industry. It must be emphasized that concepts of the magic or omnipotence of science can be very dangerous and harmful, in that they place a superhuman burden on technical men within the industry or on any who contemplate entering the industry, and further tend to create barriers between production men and technologists. I know of many instances where a textile mill has hired a chemist, or physicist, or engineer, with little or no background in textiles, but with the thought in mind that he must know all the answers. The result of such a situation is very familiar to many of you—a sincere technologist awaiting a statement of the problem or problems by management; management, equally sincere, unable to properly define the problems but simply figuring it had bought the answer in the form of the technologist. The situation is quite analogous to that of the man with a very bad toothache who entered a dentist's office. When the dentist asked the patient which tooth ached, all he got was the answer "you tell me, you've got the education".

If we recognize that technology has contributed to this unrest, it remains for those of us here to work towards an improvement in the situation—but how? What we require now is a better picture of the future of industrial textile research. The problem apparently resolves itself into the questions of who shall assume the responsibilities of leadership in research and development in the industry, and what are the technical problems of the industry.

There appears to be little doubt that the primary responsibility for leadership must be assumed by the technologist and to him falls the task of mapping the technical paths for his industry. This is not only true of the textile industry; it is equally true in all industries. Several years ago, when a group of industrial leaders were visiting the Eastman Company in Rochester, they asked Dr. Mees who should make the important decisions as to what research shall be pursued, how it should be conducted and when it should be stopped. In Dr. Mees' opinion, "the best person is the man actually doing the work; the next best the head of the department who is intimately acquainted with the work; after that, you leave the field of those well qualified and go to increasingly worse groups—the research director who is wrong about half the time, a committee wrong most of the time, or the vice presidents who are wrong all the time."

The recognition of the responsibilities of technical leadership imposes serious obligations on the part of both management and technologist. Intelligent management must see to it that those who direct its research and development are part of its policy-making group. The technical director must be more than an able scientist, he must be capable of evaluating the problems both from the point of view of the laboratory and from the point of view of the economic structure of his company.

It is an unfortunate fact, however, that in many cases the technologist has not assumed this leadership. Part of the difficulty has been the lack of suitable training, part to a snobbishness on the part of the scientist, and part has resulted from a line of class-consciousness which has existed between executive and technologist. There has been a tendency of many scientists to look down on the technical problems of industry. Science, like women's clothes, has its fads; for this reason, the problems of some of our traditional industries have not appeared so appealing to younger scientists as those of the newer industries. Anyone who has tried to hire physicists during the past four or five years knows best what I mean by this. The romance in physics has apparently been in the field of nuclear physics.

In reality, however, the technical problems of the textile as well as any other industry, when approached scientifically, are never trivial problems; and any technologist who acquires a sound understanding of the problems of the industry and can bridge the gap between the scientific principles and the practical concept, will find as much excitement and scientific stimulation as in any field of research or industry today.

In short, the technologist must become a student of the problems of his industry;

*Address at the Annual Banquet, AATCC, Hotel Pennsylvania, New York City, January 5, 1946.

to do this, he must be suitably trained or train himself. In this connection, it is most heartening to note his generous support given to practically all of our textile schools and research institutions in furthering their plans, many of which involve the training of men. The missing element today in a more widespread application of research is technical manpower; and technical manpower is the common denominator of all technical problems. The schools are faced with a real responsibility and I am happy to report tonight that many of them are ready and able to assume it.

Let us now pass on to the second phase of the discussion, and consider the technical problems which the industry must face. If we may generalize for a moment, we find that, in a broad sense, they are basically the same as those in all industries; they involve the harnessing of a vast reservoir of scientific knowledge resulting from work in educational institutions, government laboratories and industry. The amount of scientific knowledge already available, and much of which should be applied to the textile industry, is probably greater than all of the present forces can produce in several lifetimes. This knowledge does not stem solely from research in the field of textiles. It comes from work in the allied high polymer field; it comes from work in chemistry, biology, medicine or literally any field of science. One can cite numerous examples emphasizing the inter-relationship of different branches of science and industry. In the field of what we now know as organic high polymers, and this includes such materials as the fibers, rubbers, resins and plastics, we find that only a slight difference in chemical structure may decide whether a material is a fiber or rubber or plastic. A classical example of this is found in the recent development of elastic nylon by the DuPont Company. This material, which may show almost complete elastic recovery from 300 per cent extension and which in reality is a rubber, differs from regular textile nylon only by the fact that some of the hydrogen atoms on the amide groups have been replaced by small hydrocarbon groups such as the isobutyl group. Another interesting example, emphasizing the dependence of one industry on the science of another, is found in the cosmetic industry, especially that phase of it dealing with human hair. The fundamentals of wool chemistry developed in the earlier research programs of this organization and the Textile Foundation today form the scientific basis for all modern methods of permanent waving of women's hair. And it is interesting to note that thioglycollic, which was a laboratory curiosity ten years ago and which we used at that time to split cross-links in the wool molecule, now is being produced by the hundreds of thousands of pounds and consumed entirely by the cosmetic industry. In retrospect, it is amusing to remember that while our work was in progress at the National Bureau of Standards, we probably had more visits from chemists in the cosmetic field than from those in the wool industry.

Turning to the more specific problems of the industry, we find that they are indicated by trends which were under way before the war, and were in some instances greatly accelerated by the war. Chief among these is the development of new synthetic fibers, the improvement in the natural fibers, the development of chemical finishes capable of profoundly altering the properties of fabrics, and finally, studies directed towards a better understanding of the functional properties of fibers and fabrics for industrial uses as well as for clothing. It should be emphasized, however, that in spite of the fact that the industry has gained a wealth of constructive ideas and new experience from the war, and contrary to public opinion, the country is not going to be presented at this time with many revolutionary fabrics or textile materials. The war simply accelerated the lines of work indicated earlier, but it will take all of our post-war efforts to bring these developments to their successful conclusion, and I think this will be borne out in the remaining discussion.

If I were a radio commentator, I would label this last phase of the discussion "a prediction of thing to come". However, the radio commentator has the advantage of making so many predictions each week, that the listener becomes completely confused and one never knows which predictions are wrong. Nevertheless, I should like to venture a few speculations.

What about the synthetic fibers? It seems certain that to the names of rayon, nylon, Aralac, Vinyon and Velon, will be added many others. The principal limitations will be the ability of the chemist to synthesize suitable polymeric molecules or to utilize the natural ones, and from these build fibers having the desired mechanical or chemical properties. The real problem here lies in defining what we mean by "desired" properties, and the solution to this problem will only come from a better undertsanding of the contribution of the intrinsic properties of the fiber to the properties of the end product. As a specific example, nylon and silk both make excellent parachutes and excellent women's hose, with nylon apparently having a decided edge, but this does not mean that they are equally suited for most materials. In contrast, silk makes a far superior necktie and, in textile parlance, a silk fabric has a warm full hand, and a similar filament nylon fabric a cold, somewhat clammy dead hand. In other words, it is at once apparent that different properties of the fibers have important bearing on their utility for different fabrics. In the case of parachutes and women's hose, strength and elasticity are of outstanding importance, and both silk and nylon meet these specifications. In the case of fabrics with a desirable hand, resiliency, modulus of elasticity, and moisture absorption are also important, and from the point of view of these properties, silk is superior. Some time in the near future, the textile fabricator will look for fibers having certain well defined properties or combination of properties, but before he does that he must first seek the more scientific answers to what has been learned by long empirical experience —why wool makes ideal winter clothing or tropicals; why silk makes such good neckties; why nylon makes good hose; cotton—good shirts.

The rayon industry seems destined to continue its phenomenal growth and improve the quality of its product, but relatively speaking, consumption of most other synthetics except nylon will proceed much more slowly and cautiously until their properties and potentialities are better understood. The newer synthetic resin fibers show much promise in the field of industrial fabrics—the synthetic protein fibers will find their greatest outlet in clothing fabrics, where their flexible, moisture absorbing molecules are most adaptable to producing wool-like or silk-like structures. How successful the protein fibers will be will depend on the ability of the chemist to build a suitable molecular structure from the protein molecules. Fortunately, a fairly clear picture of the necessary structure is now available.

What of the natural fibers? A quick glance at the statistics reveals some interesting information. Cotton and wool still account for more than 85 per cent of the textile fibers consumed in this country, the bulk of the remainder being accounted for by rayon. The questions arise, therefore, as to why these fibers, which apparently dominate the field, appear to be fighting a defensive battle and must they continue to fight one. One answer can be found in the fact that the synthetics in most cases have had to fight a tough battle to gain their markets and have marshalled the right kind of forces to do this. Relatively speaking, the natural fibers have been unprepared for the battle. In the past, the success of cotton has been due to its availability, price and its ability to make strong, durable industrial and clothing fabrics; the success of wool, to its ability to be fabricated into materials of low bulk density which entrap much air and are eminently suited to the production of cold weather clothing, as well as its ability to yield fabrics of unusual hand and shape-holding properties. In spite of

these excellent properties, both fibers have continued to lose markets to the synthetics, and probably will continue to lose others. Nevertheless, with proper planning, they might well go on the offensive and gain new markets or regain some of the old ones both by improvement of the properties of these fabrics or even by modifying the intrinsic properties of the fibers themselves. Just prior to the war, it was shown that the chemical and biological properties of wool, such as its resistance to attack by chemical reagents as well as by moths, could be profoundly altered by a slight modification of its chemical structure. Similarly, a process for modifying the chemical structure of cotton, developed by the Southern Regional Laboratory rendered these fibers extremely resistant to attack by fungus. These represent only two of many possibilities. The burden of taking the offensive becomes the task of those primarily responsible for the production of cotton and wool, and they alone must see to it that by education and developmental work, the same technical skill is applied to their products as is being applied to the synthetics.

Peering further into the immediate future, one finds that the chemical finishing field will be extremely active. The development of chemical finishes capable of altering the properties of fibers, yarns or fabrics to make them shrink-resistant, fungas-proof, flame-proof, or water repellent, received great impetus during the war, largely as a result of the efforts and support of the Research and Development Branch of the Office of the Quartermaster General. And in spite of the Herculean job which was done by that organization under very trying conditions, it must be stated that the problems have not as yet been satisfactorily solved. As a matter of fact, I think it is fair to state that as a result of much of this work, many of the problems have for the first time been properly defined. I should like to illustrate this with two examples, the problem of water-repellent cottons and shrink-resistant woolens. Prior to the war, the problem of making water-repellent fabrics was conceived of as involving the application of a hydrophobic surface to hydrophylic cotton, with little or no thought given to the base fabric. The Quartermaster's research program, carried cut in conjunction with industry and research laboratories, dramatically demonstrated that the base cloth is fully as important, if not more so, than the finish, and as a result of this work the water-repellent fabrics obtained toward the end of the war were many-fold superior to those obtained at the start. With this as a background, the Office of the Quartermaster General has now under way a large scale program at the Institute of Textile Technology, designed to study the fundamentals of fabric construction as related to water-repellent fabrics and I feel that in the future, fabrics far superior for this purpose will be forthcoming.

The same was also true of shrink-resistant wool. Shrink-resistant treatments have been known for more than fifty years, and yet shrink-resistant wool did not obtain an even modest foothold in this country before the war. Some said it was not important, in spite of the fact that the greatest deterrent to the wider use of wool in such items as socks and underwear is the tendency of these fabrics to shrink excessively during laundering. When one considers that the Army saved upwards of $1,500,000 per month by applying a shrink-resistant treatment to socks alone, it must be admitted that the possible impact of a shrink-resistant wool on the industry is great indeed. Then why weren't shrink-resistant processes adopted earlier? The most likely answer is because the problems involved are not simple, and much development work remained and remains to be done. There are many processes available, but all involve some problems which have not as yet been satisfactorily solved. In addition, the nature of the task varies with different types of fabrics; shrink-proofing socks is one problem, shirting another, or sweaters another. However, as a result of the work that has been and is being done by the Quartermaster, the concept of shrink-resistant wool has become very clear and it is now only a matter of time until washable woolens will no longer be a novelty.

Finally, I should like to mention a phase of work that obtained its real start during the war, and which is destined to continue at an accelerated rate. This phase is directed towards a better understanding of the functional properties of fabrics for clothing—it might be termed the "science of clothing" or the "physiology of clothing". It might be appropriate to ask at this time just what we seek in fabrics for clothing, other than style, color and price. From a functional point of view, the chief requisite is protection against the elements—cold, wind, rain, and sun. Protection against cold may be achieved by trapping as much air as possible in the clothing, either by using the principle of layers of cloth, or by using thick fabrics of low bulk density. When it comes to wind and rain, tightly woven water-repellent fabrics are required. But when it comes to summer clothing, we compromise between scientific efficiency and moral standards. One of the things that science proved during the war was that in hot humid weather and in the absence of direct sunshine, the best way to keep cool is to remove all clothing—an observation that was probably first recognized by Adam or Eve. Nevertheless, by seeking the scientific explanation for traditional knowledge or practices, progress in a field can proceed at a much faster rate than is possible through the empirical approach, and what is more important, the traditional practices may often prove to be unsound. This was demonstrated during studies of fabrics for tropical or jungle warefare. Here it was assumed that the fabric must "breathe", in order to allow free passage of the moisture evaporating from the body. In order to meet this specification, relatively thick open weave fabrics were designed, the thickness being necessary in order to give the fabric more durability. Fundamental studies on these fabrics soon revealed that in the absence of appreciable wind, as in the jungle or indoors, water vapor passed through either the most tightly woven or most open fabric with equal facility. This was a startling result indeed, and its implications were immediately obvious. By going to tightly woven fabrics, it was possible to obtain much thinner fabrics which imposed on the body of a much smaller heat load. On the basis of these findings, the tropical uniforms of our Army were redesigned, with the resultant increase in the efficiency of our fighting personnel. Does this not suggest the possibilities for the development of far more efficient summer clothing?

Here are problems for the chemist, physicist, engineer or physiologist. I make a plea again to the technologists to become a student of these problems and by doing this assume the research leadership of our industry. If this is done intelligently, it will not be necessary to indulge in quibbling over the trite question of whether or not the textile industry is research-minded. Personally, I believe that much of the apparent lack of interest on the part of management is a manifestation of the lack of sound leadership which can do something more than talk about a vague "indespensability of textile research for the future of the textile industry." I predict again that any technologist who is ready and willing to understand the industry, will find opportunities and scientific stimulation equal to those in any industry today.

* * * *

Toastmaster Philip: If you will be patient for two more minutes, I promise to let you go.

I should like to express on behalf of the Association appreciation to Dr. Harris for his stimulating address. We have been handing out economiums and accolades around here. We have referred to the medalist as a scientist and as a man. I should now like to present the real reason for Dr. Harris' attainment of this high honor. The lady who has been his constant helper, the mother of their children, who keeps them quiet

when he is studying, and perhaps—I don't know—she wrote the speech.

Mrs. Milton Harris, will you stand up? (Applause.)

And one final word: It is my privilege to announce that this group, as such, will convene again the first week in December in the City of Boston, for the silver anniversary convention of the A.A.T.C.C.

Thank you very much, and goodnight to you all.

—♦ ♦—

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(Concluded on Page 112)

CONCERNING TEXTILE RESEARCH*

EDWARD R. SCHWARZ, F. T. I.

Professor of Textile Technology; In Charge: Textile Division, Massachusetts Institute of Technology

TEXTILE testing has progressed through several stages in reasonably close association with the First and Second World Wars. The first era, prior to World War I, saw us making no effort to control anything. We were a group of what was known then as "rag pullers." It took some little time through World War I and immediately thereafter to get rid of that particular title and to enter the second era. A distinct line of demarkation between Era One and Era Two, or between Era Two and Era Three, cannot be drawn. But in Era Two, from about the middle of World War I, well up toward the beginning of World War II, we went to the other extreme and tried to control everything, such as humidity, temperature, rate of load application, hydrogen-ion concentration, viscosity, and pressure. It is remarkable that we left anything to measure. After all, something has to be varying in order to find out what does happen.

Many of our results have been open to question and have not worked out in practice, perhaps because we have kept all but one factor constant and have simply studied the behavior of a single variable. With everything else constant, that one factor cannot be expected to behave, and does not behave, as it would if something were allowed to change with it.

We have come into Era Three following World War II, and through the latter part of it, with an increasing realization that you cannot go to either extreme—controlling nothing or controlling everything. Fortunately, we have some mathematical and statistical techniques, some sampling methods, equipment, and training increasingly available to make possible the control or maintenance at constant values of as many variable factors as reasonably can be expected and to do so easily and without complexity of equipment. We should allow several factors, not just one, to vary and then study how they vary among themselves.

The era which we are in now will open a way to a study of the multiplicity of variables, acting relatively freely and yet subject to intelligent analysis. That means that we must use methods which give the significance of differences between values, between values and a standard, and between means. We must make more intelligent use of graphics, the plotting of data, the rectification of curves, the determining of the equations which represent the curve, or, conversely—a plot to represent an equation.

We should, in general, be much more interested in trends along a curve than in specific points on a curve. We must use such things as rank correlation; simple, multiple, and partial correlation; mean square contingency; and analysis of variance.

Since trends have been mentioned—we have trends away from some things and toward others. We have a trend away from a consideration of the ultimate tensile strength and the ultimate stretch of a material as being the unique measures of quality of a material. We have a trend toward the use of values below the ultimate strength and the ultimate deformation, and not only the values themselves, but what led up to them and what followed them.

We are interested in a lot of things other than simple breaking strength or tearing strength or bursting strength. We are interested in resilience, flexibility, stretch, drape, friction properties, and comfort properties; abrasive resistance, fatigue resistance, dielectric properties, the action of high-frequency oscillations of one type or another, and energy absorption characteristics. These have called for a new approach to the field of research and in testing. This is an engineering or a physics approach, in addition to the older chemical approach. It has called for an integration of all fields, including biology, botany, histology, and certainly, applied mathematics as well. In that field we need more training and better training. At Technology we have had 75 years of experience in teaching work dealing first with textile engineering, then with textile technology, and finally with textile research.

We, at the Institute, have seen textile engineering, mill construction and process, and textile machine design come to the peak. From there on the emphasis went, not on how the materials were made or where or with what, but to what their characteristics were during manufacture and subsequent thereto. So from that period of about 1871 to 1946, there has been textile education at M. I. T.

We need more. We need a better quality. We need more widespread interest and an increasingly better quality elsewhere. This is coming. We are getting out of our 75 years (35 years more than it took Moses) wandering in the wilderness into a promised land. Perhaps there should be hesitance in using the word, "promised" because over the 75 years, we have seen so many promises and so little actuality. However, the promises are coming to fulfillment now, and industry, by and large, of its own accord, is approaching the educational institution with an open pocket book in its open hand, instead of a closed fist. Funds are becoming increasingly available, freely and as a result of well-engineered drives. Examples are instances at Callaway Institute, Philadelphia Textile Institute, Lowell Textile Institute, The Institute for Textile Technology, Clemson College, North Carolina State College and M. I. T. In the latter instance, this has come through the establishment of three textile research fellowships, effective immediately. They have been granted under the title of The Clark Thread Company's Research Fellowship. They will extend over a period of 10 years, three fellowships each year. Two of them are restricted to Chemical Engineering graduates and the third is unrestricted. Additional fellowship and scholarship funds will be available shortly in the Slater Memorial Laboratory. This is worth while progress, and essential for the actual training of textile research men from the academic point of view. But there is one other thing necessary to go with this and which should come with it. That is grants in aid of research to allow for supervision, other incidental expenses, and for the training at the graduate level of a competent research worker who cannot get laboratory experience out of a book or by the lecture system.

We have profited from what we have been through during the difficult wartime conditions. We are learning a lot from the G. I. program. We are learning that you must be an excellent phychologist with a very good understanding of human nature if you hope to be successful in it. It will not be easy, by any

*Presented at session on "Peacetime Applications of War Developments in Textiles," Victory Convention, New York, Jan. 5, 1946. The other papers presented at this session were published in the last issue.

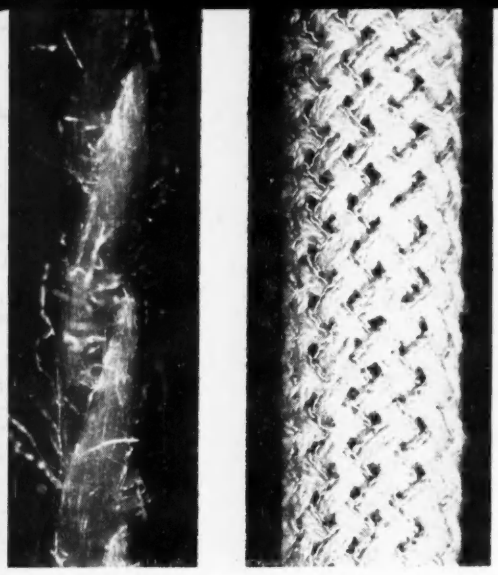

Figure 1
"Form Factor" in twisted and braided strands.

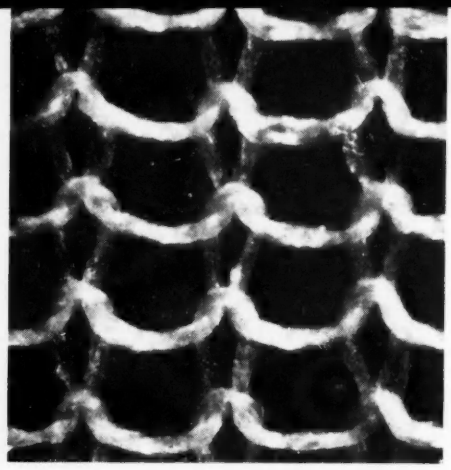

Figure 2
Three dimensional "Loop" structure of Knitted Fabric.

Figure 3
The familiar Leno Weave. An illustration of "Form Factor." (Compare with Figure 8.)

Figure 4
Form Factor and twist.

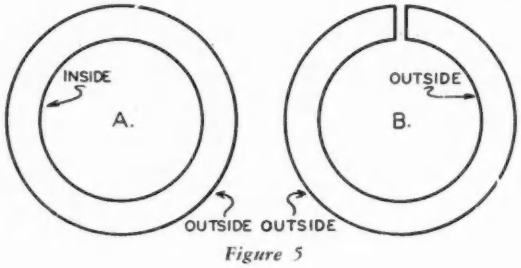

Figure 5

means, in an institution such as ours or the textile schools where the laboratory part of the work is predominant. Space requirements and the increasing number of students will handicap the educational program as to the number of people who can be turned out adequately equipped to take the place of those non-existent technicians who did not get a chance to study over the war period.

We are also using, as far as we can, the facilities that have been developed in training personnel through the war effort from both the Army and Navy. In doing this, we have had to utilize the work that has come out of war-time research in various institutions and various laboratories, both in the field of radiation and radar and particularly in the servo-mechanism laboratory. We are getting to the point where the need for fundamental information is so acute, and where so much of it must be obtained to be of real value, and where so much time essentially has to be spent on analysis, that saving of time in getting data is now important.

We will not need robots, necessarily, but we will need a better control of testing equipment from an automatic standpoint in order to get the data out properly and fast enough and in sufficient quantity. We have got to make more intelligent use of the photo-cell, polarized light, vacuum tubes for detection, control, and amplification, the oscillograph, high-speed photography, the electron microscope, X-ray diffraction units, and the servo-mechanisms which can control procedure or make automatic record or transfer from one unit to another.

This involves a multiplicity of techniques, and it involves training in a multiplicity of fields. It is not intended that a textile technologist shall be an expert mathematician, botanist and physicist all at one time. He may be an expert in one of those fields, but he should have more than a smattering of knowledge in each one of the others. The trend of the thinking of the people who are planning the graduate level of training in textiles is along the line of furnishing that kind of background.

We are recognizing that we can divide the textile field into two large fields that overlap. One is the study of the inherent properties of textile materials, and the other is the form in which the material is to be found. That form may modify the inherent properties or, in turn, the inherent properties may modify the form of the final product. There is, obviously, a difference between a twisted strand and a braided strand (Fig. 1), and one will be better in certain instances than the other. There is a difference between a satin and a pile fabric. They feel differently and they are used for different purposes. These are ob-

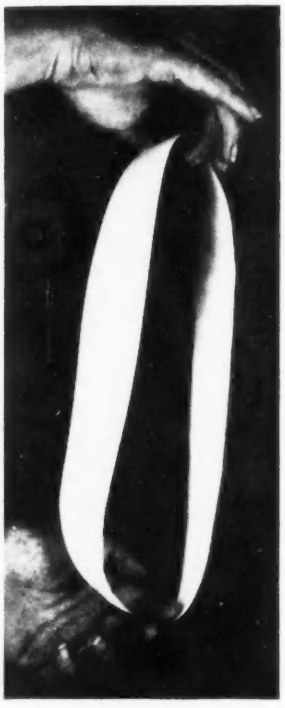

Figure 6
The Mobius Strip—one edge and one surface.

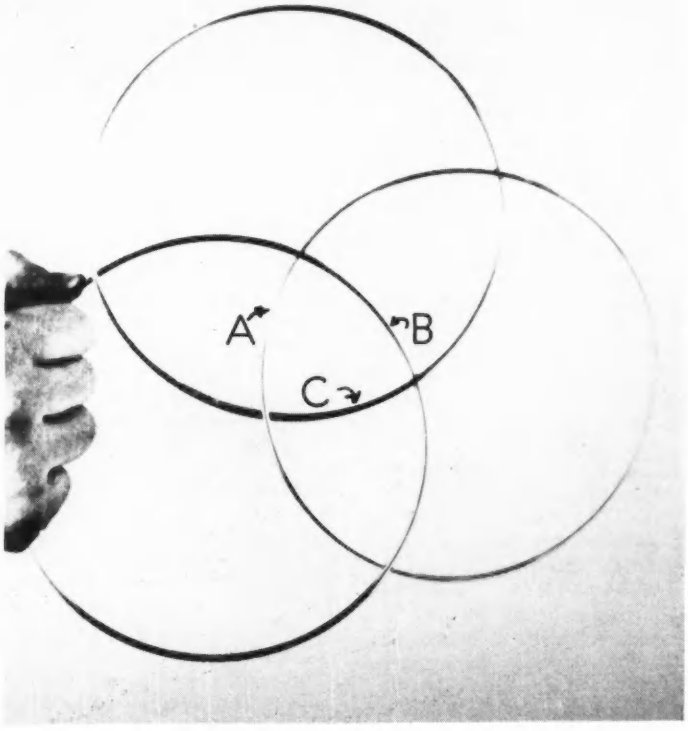

Figure 8
These brass rings cannot be separated—BUT they are not linked with each other! (Note Leno crossing at A, B, and C.)

Figure 7
Twist without rotation

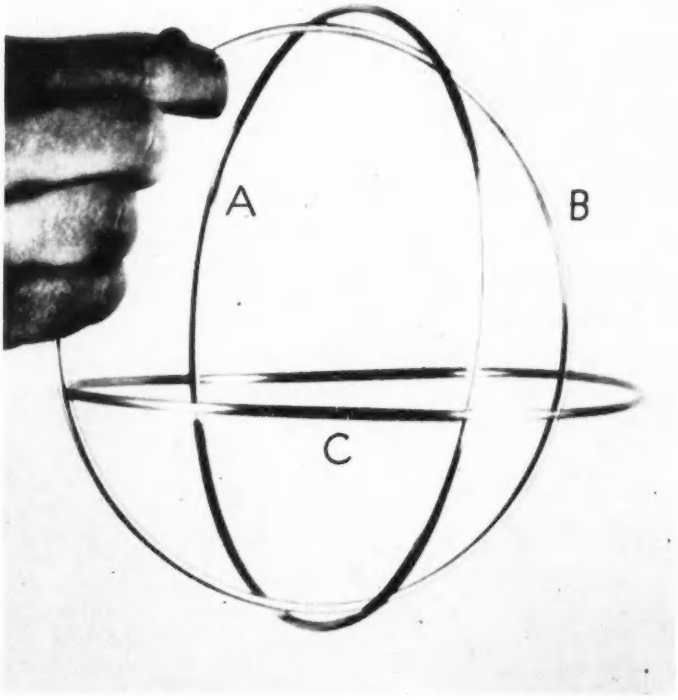

Figure 9
This arrangement of the rings of Figure 8 shows that no one ring is linked through any other. They are still inseparable!

vious form factors, regardless of what kind of fiber is used in the particular fabric itself. There is a difference between a heavy canvas and an open weave fabric. Again, the difference is brought about, regardless of the fiber used. For a given form, for a given yarn, and for a given kind of structure, it is possible to modify the inherent properties of the fibers and to change the behavior of the resulting unit. This is done in the shrink-proof treatment of wool, and the resin treatments of fabrics.

Fig. (4) shows a flat strip of material which varies in width along its length. One end of the strip has been rotated several times, and the distribution of twist can be seen. Now the inherent resistance of the material in torsion is constant throughout the strip, but the variation in form of the strip (its width in this case) has brought about a concentration of twist in the narrow portion, with lesser degrees of twist where the width is greater. This is a familiar condition in yarn where the diameter varies from length to length and is a continuing nuisance to the industry. The "form factor" here is obviously important.

Less obvious factors can be present. Fig. (5), for example, shows a simple ring. It has an outside edge and an inside edge and two surfaces. If, however, a simple cut is made as in (B), there will be only one edge—all outside, yet there are two surfaces as before. Now consider Fig. (6). Here is a strip of paper which has been given a half turn of twist before fastening the ends together. Except for the twist, it is apparently similar to the disk of Fig. (5a). If it is, it will have two surfaces and two edges. If, however, it is critically examined, it will be found to have only one edge, as does the material of Fig. (5B), but, in addition, has only one surface. This can be readily demonstrated in an actual model which the reader can make for himself. If a pencil is placed on the strip, so fashioned, and a line drawn down the middle of the strip, it will continue back to the starting point without the pencil leaving the surface anywhere. Similarly, if the finger is run along the edge, the process can be continued indefinitely without losing contact with the paper for an instant.

Fig. (7) shows a strip of paper wound on a spool and placed with the axis of the spool vertical. It is apparent that on the spool there is no twist in the paper strip. But if the outer end is simply lifted *without rotating it in the least*, it is equally apparent that twist has been inserted. All that has been done is to raise each coil of paper as it leaves the spool so that its center line no longer lies in a horizontal plane, but in a helix with a vertical axis. This is what happens when yarn is unwound over the end of a package instead of radially, and is the basis for the silk or rayon "throwing" process. The inherent twist characteristics of the strand have been profoundly modified by changing the form—by introducing a "form factor." It may come as something of a shock to realize that twist in substantial amounts can be added to or subtracted from a yarn *without rotating either end of the yarn.*

The exact nature of the crossing of yarns in a leno fabric is not always clearly understood. This is perhaps the first time that it has been pointed out that a familiar trademark is also an excellent rendition of a portion of a gauze weave Fig. (3). Relationship between strands of wire which duplicate a leno crossing is shown at A. B. and C of Fig. (8). Strand C is under A and over B, and no matter how the figure is viewed or which strand is selected, the same condition holds.

More than this—and not at all so apparent—is the fact that while the three rings are inseparable unless one of them is cut, still *no two rings are linked together.* This is more evident in Fig. (9). Where A is outside of B and inside of C; B is inside of A and outside of C; and C is inside of B and outside of A.

Applied mathematics, relating to form factors, (differential geometry) is something we must know more about in the future. It is basic to an understanding of the resistance of fabric or yarn to abrasion. It is basic to the resistance of the fabric to the passage of heat or water. It is a prime factor in the construction of lenos, honey-comb weaves, crepes, and a host of other important distorted fabrics. It is of tremendous consequence in the design of industrial fabrics, yarns, and cordage. Conversely, the inherent properties, such as elasticity, plasticity, energy absorption, density, tenacity or resilience will determine the optimum form in which the material can be used. Much more information is needed as to these properties. To this end, research must be intensified, financially supported and, simultaneously, a far-reaching and intelligent training program must be undertaken by our institutions of learning. In textile research, two eras have passed. What will the third bring?

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MEETING, PHILADELPHIA SECTION

A MEETING of the Philadelphia section was held on Friday, January 18th, 1946, in the North Roof Garden at the Bellevue-Stratford Hotel.

Due to illness of the new chairman, Curt C. Baeringer, and the absence of Vice-chairman, Walter Fancourt, 3rd, the meeting was conducted by Arthur W. Etchells. Mr. Etchells introduced the speaker of the evening, Dr. H. H. Mosher, whose subject was "Surface Active Substances, Their Function and Application to Textile Operations."

His talk was received with much enthusiasm and all questions were satisfactorily answered.

There were 122 present for the dinner and 139 for the meeting.

Respectfully submitted,

A. E. Raimo, Secretary.

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COMMUNICATION

ARMY SERVICE FORCES
OFFICE OF THE QUARTERMASTER GENERAL
WASHINGTON 25, D. C.

27 December, 1945

Mr. William D. Appel, President
American Association of Textile
Chemists and Colorists
National Bureau of Standards
Washington 25, D. C.

Dear Mr. Appel:

This office wishes to express its appreciation and commendation to you and to the officers and members of the American Association of Textile Chemists and Colorists for the many contributions afforded the Quartermaster Corps during the war years.

The activities of the Research Council and the several sub-committees have been of material assistance in the development and evaluation of textile testing procedures for military usage. Similarly, we believe, some of the testing techniques which have been developed by the Quartermaster Corps, many of them in conjunction with officers and members of the A.A.T.C.C., will undoubtedly help in advancing the establishment of suitable standards in the field of civilian textiles.

I personally want you to know that your contributions to the work of our office will long be remembered and recognized by the Quartermaster Corps as playing an important part in the total effort to help bring victory to our Country. It is hoped that you will continue to be interested in our post-war program of improving existing Quartermaster items and in research and development on new ones.

Very truly yours,

Signed

GEORGES F. DORIOT
Brigadier General, QMC
Director, Military Planning
Division.

ONE HUNDRED AND FIFTY-SECOND COUNCIL MEETING

By-Laws Amended; New By-Laws Proposed; Stiegler Appointed Research Director; 25th Anniversary Convention in Boston; Cady to be Colour Index Representative

THE Council held its 152nd meeting in the Hotel Pennsylvania, New York, N. Y., on Thursday morning, January 3, 1946. Present were President William D. Appel, presiding; Hugh Christison and Henry F. Herrmann, Vice-Presidents; William R. Moorhouse, Treasurer; Louis A. Olney, Chairman of the Research Committee; William H. Cady, Robert E. Rose and P. J. Wood, Past Presidents; Edward S. Chapin and Walter J. Hamburger, representing Northern New England; Allison R. Fletcher, Harold B. Sturtevant, Rhode Island; A. G. Ashcroft, Patrick J. Kennedy and Leonard S. Little representing New York; Boyce C. Bond, James P. Conaway and Arthur W. Etchells representing Philadelphia; A. Henry Gaede, Samuel L. Hayes and Raphael E. Rupp representing Piedmont; William B. Griffin representing Southeast; Arthur T. Brainerd representing Mid West; and Harold C. Chapin, Secretary. The Secretary's report of the 151st Council meeting and financial report of Dec. 28, and the Treasurer's report of Jan. 2, were accepted. All standing committees were reappointed, with addition of John A. Cairns and Albert E. Van Wagner to the Publicity Committee.

The By-laws were reported amended by letter ballot of the Council as follows—Article III, Section 2, to read, "The President, through written notice to the Secretary, may delegate his duties to either Vice-President. If in the event of his own absence or disability he shall not have so delegated his duties, the Secretary may call a meeting of the Council, which will appoint one of the Vice-Presidents to serve as Acting President until the President himself shall resume his duties or appoint one of the Vice-Presidents to perform them; or the Council may vote such appointment in the manner provided in Section 5 of this Article III."

Article III, Section 4, second sentence, to read, "He shall pay all bills and other evidences of indebtedness to the Association after they have been approved in writing by the President and Secretary; except that all expenditures for research shall, in addition, require the written approval of the Chairman of the Research Committee, or in the event of his absence or disability, the Chairman of the Executive Committee for Research."

Article III, a new Section 5, to read, "Any question which might properly be submitted to vote in a Council meeting may in an emergency be submitted to the Council through letter ballot, in form acceptable to the President, Treasurer and Secretary, or any two of these or their properly authorized substitutes. A majority vote of the entire Council, so obtained, shall have the same force as a majority vote of those constituting a quorum in a Council meeting. With the question shall be included an explanation of why the emergency requires a vote before it can be taken in a Council meeting.

Article IV, Section 4, to read, "The Committee on appropriations shall consist of the Treasurer and Secretary of the Association and three Past Presidents appointed by the Council. Any proposal made to the Council involving the expenditure of the Association's funds, before being voted on by the Council, shall be referred to the Committee on Appropriations, which shall investigate its merits and make a report to the Council at or before its next meeting. The Council may delegate authority to the Committee on Appropriations to invest funds appropriated by the Council for investment, and to sell securities owned by the Association and reinvest the proceeds, in accordance with the limitations of Article III, Section 4, of these By-laws. The Committee on Appropriations shall report any such action to the Council at the next Council meeting. It shall be the further duty of this Committee to prepare and present to the Council for approval, at its last meeting of the fiscal year, a budget covering total estimated expenditures of the Association for the succeeding year."

In accordance with the last amendment the Council delegated authority to the standing Committee on Appropriations to invest funds; and appropriated $15,000 for investment. It was proposed that the By-laws be further amended to provide for a standing Committee on Constitution and By-laws, and to make annual dues, from Nov. 1, 1946, $7.50 for a Senior or Associate member, $5.00 for a Junior member, and $3.50 for a Student member. This was passed to letter ballot of the Council, with the approval of the meeting.

The Chairman of the Research Committee reported appointment of Harold W. Stiegler as Research Director, and William H. Cady as the Association's representative in revision of the Colour Index.

With approval of the Mid West Section for postponement of the Chicago meeting until 1947, it was voted that an invitation from the Northern New England Section be accepted, to celebrate the 25th anniversary of the founding of the Association in Boston with a convention there in December 1946.

Walter Kidde & Company and Plastic Film Corporation were elected to Corporate Membership. Each of the following was elected to the class of membership specified, as of thirty days from publication of application, provided no objection be received meanwhile by the Secretary.

SENIOR

W. C. Adamowicz
S. C. Alexander
W. E. Allen
L. E. Anderson, Jr.
J. N. Avery
J. S. Beattie
G. A. Billingsly
P. R. Blaeser
B. I. Blasz
H. M. Block
B. Britt
T. H. Bryant
J. R. Burkett
J. L. Burn, III
C. E. Carr
R. J. Cegelka
G. S. Chapin
Y. S. Chen
E. F. Cir
H. P. Claussen
A. T. Clifford
H. J. Cranston
S. R. David
J. F. Deal, Jr.
H. A. Dickert
T. E. Dillon
M. A. Fischer
S. W. Fiske
M. Frankfurt
R. P. Friedrichs
D. M. Gans
L. J. Gibbons, Sr.
L. J. Gibbons, Jr.
E. H. Grayson
L. C. Greene
J. Gregory
A. A. Grivin
A. W. Guay
A. J. Gubicza
C. J. Hammer
A. T. Harkins
C. R. Hentz
I. O. Hinshaw
E. A. Hoeft
I. C. Hoffman
B. J. Hoitsma
H. H. Hollingsworth
P. D. Jacobs
L. S. Jaffe
W. H. Jobling
G. A. Jonic
H. A. Kline
H. C. Krijgsman
J. F. Laucius
E. W. Lawrence
C. P. Leddy
N. J. Letang
G. F. Long
M. M. MacLean
L. Martin
A. Martinelli
W. H. Masterson
J. F. Matuszeski
J. H. May
M. E. McCrosson
O. Michaelson
M. Miller
J. B. Moran
R. H. Morris
R. E. Morris, Jr.
J. B. Mungall
L. R. Munson
J. S. Neely
L. R. Parham
H. R. Plumlee
J. H. Queen
J. K. Reed
J. W. Rhodes
C. L. Richardson
G. M. Richardson
M. Rosa
M. H. Roth
J. Rowatt
W. W. Russell
H. L. Sanders
A. Sands
J. W. Schappel
G. H. Schendel
V. Sherrer
R. J. G. Schofield
H. F. Schwarz
C. M. Scott

C. D. Segner
O. L. Sherburne
S. Shultz
C. H. Sillin
E. Smith
N. Sugarman
W. P. terHorst
O. J. Theobald, Jr.
F. L. Toher
R. D. Totten
N. S. Tsai
A. Verga
J. J. Veronelli
C. F. Vogt
E. S. Waters
J. B. Wathey
W. Watson
D. H. Webster
D. Weinberg
E. S. Wierman
J. G. Wilson
P. J. Wingate
B. Wright, Jr.

JUNIOR

W. R. Battersby
I. Betancourt
C. F. Bishop
B. J. Bodre
R. E. Brown
W. F. Demenie
W. L. Dills
R. J. Dion
J. Falcon, Jr.
E. L. Johnson
V. J. Pappas
F. Rubin
N. E. Russo
S. Smith, III
R. L. Stephens
D. L. Turner
C. W. White, Jr.

ASSOCIATE

W. Adams
W. L. Blackhall
L. W. Crouse
J. Duray
P. P. Espinosa
C. C. Furtado
A. Gero
H. M. Gorton
E. Gruen
L. N. Hale
V. Leonard
C. S. Lowe
R. G. Macdonald
L. M. McDaniel
E. E. Popcke
J. A. C. Pope
E. T. Powers
H. W. Zussman
V. Sweck

STUDENT

R. W. Bechard
J. J. Bernard
A. L. Bianco
W. J. Biggers
B. Blagman
E. N. Corby
R. E. Elwell
E. E. Foley
E. J. Frazier
D. Fuchs
C. Gorenstin
W. S. Gross
G. Loeb
L. F. McMahon
A. O. Mendonca
J. W. Morton
J. O. Navarro
H. D. Penn
K. Politzer
P. L. R. Spindola
A. Tamosauskas
J. M. Roughan
L. Springs
J. H. Weinstock
E. R. Wilbur
E. B. Yakin

Transferred from other classifications to Senior Membership were:—

J. Axelrod
M. Babey
J. Epelberg
H. G. Gendreau
K. J. Giese
M. L. Hirsh
R. K. Lyle
C. M. Patton
H. D. Pelan
R. P. Timmerman

Respectfully submitted,
H. C. CHAPIN,
Secretary.

—♦ ♦—

SECRETARY'S FINANCIAL REPORT—DECEMBER 28, 1945

Received and transmitted to Treasurer	*Applications*	*Dues, regular and reinstate*	*Dues, Corporate and Sustaining*	*Miscellaneous*	*Totals*
Aug. 1, to Sept. 28, 1945..	297.50	69.50	70.00	2,291.95	2,728.95
Sept. 28, 1945 to Dec. 28, 1945	895.00	13,713.62	24,285.00	2,494.03*	41,387.65
Total for fiscal year to date..	1,192.50	13,783.12	24,355.00	4,785.98	44,116.60
Leaving deposited by Treasurer with Secretary					2,00000

Miscellaneous items*

Dividends	130.00
Buttons	13.50
Flammability testers	220.00
Knitted Tubing	127.14
Moth cloth	186.25
Dyed Standards	49.00
Year Books	73.30
Reporters	2.00
Crockmeters	249.00
Crock cloth	100.10
Water test apparatus	41.50
Multifiber cloth	195.00
Gas fading standards	36.00
Color transference charts	89.00
American Viscose Co. Scholarship	982.99
	2,494.78
Less bank charge	.75
	2,494.03

MEMBERSHIP APPLICATIONS

(Concluded from Page 106)

Frank C. Rippner—Salesman and Demonstrator, Sandoz Chemical Works, Inc., New York, N. Y. Sponsors: H. L. Schwartz, E. Meili.

John A. Robertson—Salesman, Onyx Oil & Chem. Co., Ltd., Montreal, Canada. Sponsors: L. P. Brick, A. R. Jenny.

Carl W. Schmidt—Dist. Application Engr., B. F. Sturtevant Co., Camden, N. J. Sponsors: De H. Butterworth, E. D. Pierce.

Louis P. Schmitz—Chief Chemist, American Dyewood Co., Chester, Pa. Sponsors: H. R. Tisdale, C. J. Carroll.

Ralph Stein—Supervisor, Royal Screen Print Co., Paterson, N. J. Sponsor: C. H. Kuhl, II.

Sloan Y. Stribling, III—Tech. Staff, Aridye Application Labs., Fair Lawn, N. J. Sponsors: H. V. Petelle, J. R. Redmond.

John Suboza—Dyer, Hat Corp. of America, East Norwalk, Conn. Sponsors: S. G. Hoffman, W. F. Ferrazano.

John Taras—Research and Develop. Chemist, General Aniline & Film Corp., Grasselli, N. J. Sponsors: L. Fusser, L. Zumpfe.

Raymond J. Trimpert—Chemist, Frank H. Lee Co., Danbury, Conn. Sponsors: W. Ferrazano, I. Griffith.

William L. Triplett, Jr.—Supt. of Yarn Dyeing, Burlington Mills Corp., Burlington, N. C. Sponsors: J. B. Neely, C. Hooper.

Joseph P. Urbanek—Technologist, Jeffersonville Quartermaster Depot, Jeffersonville, Ind. Sponsors: J. R. Redmond, W. W. Chase.

William P. Utermohlen, Jr.—Research Associate, Institute of Text. Technology, Charlottesville, Va. Sponsor: J. F. Smith.

Wijnand E. P. Van Oordt—Text. Colorist and Repres. and Importer, Algemeene Amerikaanshe Kleurstof Onderneming, Amersfoort, Holland. Sponsors: H. F. Herrmann, W. B. Wilson.

Curt T. Vebel—Tech. Sales, General Dyestuff Corp., Chicago, Ill. Sponsors: F. Furchland, N. G. Koehler.

William P. Welch—Procurement Specialist, Quartermaster Depot, Jeffersonville, Ind. Sponsors: J. R. Redmond, W. W. Chase.

Jesse Werner—Chemist, General Aniline & Film Corp., Grasselli, N. J. Sponsors: L. Fusser, L. Zumpfe.

JUNIOR

Robert E. Beers—Indust. Engr., The Foxboro Co., New York, N. Y. Sponsors: R. C. Allison, O. R. Flynn.

Max L. Blitz—Asst. Chemist, Waldrich Co., Delawanna, N. J. Sponsors: R. C. Allison, F. S. Richardson.

Frederick M. Bunbury—Chemist and Colorist, Harrisons & Crosfield, Ltd., Toronto, Canada. Sponsors: O. W. Clark, S. J. Luscian.

Johnston J. Hepburn—Textile Dyer, Kenyon Piece Dyeworks, Inc., Kenyon, R. I. Sponsors: C. A. Gaudette, J. G. McGibbon.

James F. Jeffries, Jr.—Asst. Chemist, Excelsior Mills, Union, S. C. Sponsors: A. R. Thompson, S. L. Hayes.

Theodore M. Lint—Sales. and Tech., John Hand & Sons, Inc., New York, N. Y. Sponsors: R. Zametkin, N. Johnson.

Robert E. Mann—Lab. Asst., Pacific Mills, Lawrence, Mass. Sponsors: W. H. Perry, J. P. Ploubides.

Jack J. McSunas—Special Sales Promotion, S. C. Johnson & Sons, Inc., New York, N. Y. Sponsors: R. Geering, R. T. Gibson.

Thaddeus R. Moorer, Jr.—Chemical Sales, F. H. Ross & Co., Inc., Atlanta, Ga. Sponsors: G. E. Missbach, W. B. Griffin.

Redie F. Norwood—Dyer, Belmont Hosiery Mills, Inc., Belmont, N. C. Sponsors: D. B. Norton, L. J. McGinty.

Vera M. Pogachar—Asst. Chemist, United Piece Dye Works, Lodi, N. J. Sponsors: C. A. Heydon, R. J. DeWitt.

Safford P. Sweatt—Geigy Company, Inc. Boston, Mass. Sponsors: W. E. Durgin, E. W. Birdsall.

TRADE NOTES • NEW PRODUCTS

F. B. Havens, who has joined the technical service staff of the Pigment Department, Calco Chemical Division, American Cyanamid Company, Newark, N. J.

Mr. Havens was formerly vice-president and chief chemist of the Prince Manufacturing Company, Bowmanstown, Pa. He is a graduate of the Towne Scientific School, University of Pennsylvania, and a member of the American Chemical Society. He has been associated with the protective coatings and dry color industries for the past fifteen years.

In his new connection with Calco, Mr. Havens will devote his attention to problems involved in the application of pigments to protective and decorative coatings.

• TO SPEAK AT D.C.A.T. BANQUET

Major-General Leslie R. Groves, head of the atomic bomb project, will be the guest speaker at the 20th Annual Dinner of the Drug, Chemical and Allied Trades Section, New York Board of Trade, to be held at the Waldorf-Astoria, March 14, 1946.

• PHI PSI FOUNDER'S DAY

Elaborate plans have been made to observe Phi Psi Founder's Day at Hotel Lenox, Boston, Friday, March 15th, 7 P.M.

President Woodrow Foss of the Boston Alumni Chapter has appointed Walter Wentworth of Gamma as dinner chairman. John H. Grady, Beta, and past president of the Grand Council, is chairman of Entertainment. He has engaged two excellent speakers for the dinner, N. V. (Swede) Nelson the well-known football coach and cotton broker, who is also a director of the New Bedford Textile School; also, Colonel Vere Painter, past president of Alpha Chapter at Philadelphia Textile Institute, and a well-known leader in textile manufacturing.

The active men from Beta, Gamma and Delta Chapters are urgently asked to attend. The Alumni Chapters of Providence, Lowell, New Bedford and Fall River are scheduled to participate in this Founder's Day program which marks the 43rd Anniversary of this textile fraternity that has Chapters in twelve leading textile colleges North and South.

A particular program has been arranged to welcome home the returned service men. Approximately 500 men of Phi Psi have been in the armed services during World War II.

• REPRINTS AVAILABLE

The Dexter Chemical Corporation has just issued a reprint of two articles by Sidney Edelstein, its Technical Director. These are entitled: "A Test for Mercerization" and "The Effect of Aniline Black on Barium Activity Determinations." Copies are available by writing to the Dexter Chemical Corporation, 819 Edgewater Road, New York 59, N. Y.

• BAN-FLAME PROCESS

One of America's wartime secrets, fabric flame-proofing finish for textiles, known as "Ban-Flame," was revealed recently by the Joseph Bancroft & Sons Company, Wilmington, Delaware.

With the lifting of wartime security restrictions the Bancroft Company, in whose laboratories the process was developed, now report that "Ban-Flame" was applied to fabrics during the war which, it is stated, were made safe from fire and mildew by this new finish.

It is claimed that, when applied to cotton, woolens and rayons, this finish which does not change the feel or appearance of fabrics, confines the action of fire to the area contacted, prevents spreading of the flame and frees the fabric from any "afterglow."

"Ban-Flame" finish adds less than 20 per cent to the weight of the fabric, and permits it to breathe after treatment.

It is soon to be made available for civilian use through its own mills, as well as others, licensed by Bancroft.

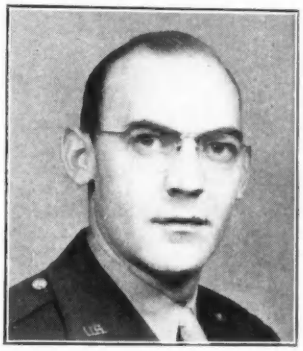
• GERMAN FELT INDUSTRY

Investigation of the German non-woven felt industry has revealed two new developments, the milling of mechanical or industrial felts with a synthetic soap substitute, and the substitution of casein fiber for wool in felts of all densities, the Office of the Publication Board said recently.

Information on these developments, as well as on other special and general features of 14 German felt producing plants, is contained in Report No. 3466, obtainable, on order, from OPB in photostat form at $1.00, and on micro-film at 50 cents. The report, entitled "Manufacture of Non-Woven or Compressed Woolen Felt in Germany," was prepared by Raymond R. Stevens, an investigator for the Technical Industrial Intelligence Branch of the Joint Intelligence Objectives Agency.

The report covers non-woven felts in sheets, wheels, and rolls. It does not cover hat body felts, paper maker blanket felts, battings, waddings, and the like. Raw materials, equipment, and methods used by the German felt industry both before and during the war are described in detail in the report.

A synthetic soap substitute, Medialan, is reported to have been used successfully in making mechanical felts at the Vereinigte Filzfabriken, A. G., at Giengen. Medialan, described as a condensation product of oleyl chloride and the sodium salt of sarcosine, apparently has greater felting power than fatty sulfonated alcohols and other synthetic detergents. Medialan fulling was carried on long enough to produce heavy, thick felts of a density up to .52 specific gravity, without breaking up of the felt. No acid was used for felting by this process.



Capt. Hillary Robinette, Jr. recently returned from active duty with the U. S. Army, who has joined the Research & Development division of Publicker Industries, Inc. in Philadelphia, Penna. Prior to his call to active duty in April 1942, Capt. Robinette, a Chemical Warfare Service Reserve Officer, was employed by Commercial Solvents Corp. in Terre Haute, Indiana. His first duty station was at the C. W. S. Development Laboratory at Mass. Inst. of Technology. For the past two years he has been stationed at the Quartermaster Generals' Office in Washington, D. C. as a member of the staff of the Research and Development Branch of the Military Planning division. In this connection he was responsible for research and development work on certain problems related to improvements in the physical and chemical characteristics of textiles used in manufacturing clothing and equipage of the Army. Capt. Robinette will continue to serve as a consultant to the Quartermaster Corps.

Ernest H. Benzing, who is now calling on customers of American Bemberg Corp. in the Southern territory. He will also continue to be engaged in technical service. Mr. Benzing has been in the dyestuff and finishing field for the past 25 years and at one time was technical representative in South America for National Aniline. He is a member of A.C.S. and A.A.T.C.C. He is a member of the rayon sub-committee and the shrinkage sub-committee of A.A.T.C.C.

Substitution of Tiolan, a casein fiber, for equal amounts of wool in felts of all densities was carried out under pressure from the German Government. The casein fiber content varied from 20-40 per cent. The U. S. investigator reports that use of Tiolan in some cases resulted in an undesirable reduction of compressional resilience in mechanical or technical felts. Wet felts containing Tiolan reportedly had a tendency to mildew.

Except for these two developments, resulting from the shortage of wool as well as of fats for the manufacture of soaps used in felting, no unusual advances in raw material, equipment, or methods were observed by the investigator.

Report No. 3466 may be ordered in Room 1326, Commerce Building, or by mail. Mail orders should be accompanied by check or money order, made payable to the Treasurer of the United States, and should be addressed to the Office of the Publication Board, Department of Commerce, Washington 25, D. C.

• CHICAGO OFFICE, GLYCO

Glyco Products Co., Inc. has announced the opening of its new Chicago Sales Offices at 30 North Dearborn Street, Chicago 2, Ill. (Telephone: Franklin 825), This office is under the personal supervision of Dr. George H. Goodyear, who has been closely associated with the technical sales development of the company's products for many years subsequent to receiving his Ph. D. at Northwestern University.

Assisting Dr. Goodyear in the Chicago industrial area will be David J. Dean and Paul Sanderson. Both of these men have had many years experience in the chemical field.

• POLYVINYL CHLORIDE COATINGS

German manufacture of polyvinyl chloride coated fabrics and films by use of the paste dispersion method is reported by U. S. investigators as being the most outstanding development in the German coated fabrics industry, the Office of the Publication Board said recently.

A description of the new technique is contained in a general survey of the coated fabrics industry in Germany, Report No. 2335 (46 pages and 9 plates), available from OPB, Department of Commerce, Washington 25, D. C., in photostat form at $4.00 and on microfilm at 50 cents. The report was prepared by De Forest Lott and William D. Hedges, investigators for the Technical Industrial Intelligence Branch of the Joint Intelligence Objectives Agency.

The report covers the following subjects: oil cloth, nitrocellulose coated fabrics, polyvinyl chloride coated fabrics and films, and miscellaneous coating materials. Discussion of general conditions in the German coated fabrics industry, as well as of processes, formulas, equipment, and other pertinent matters are included.

• PHILADELPHIA TEXTILE APPOINTMENT

Colonel Millard D. Brown, President of the Board of Trustees of the Philadelphia Textile Institute Foundation, has announced the appointment of Emil R. Pohlers to the position of Executive Director of the Foundation.

Mr. Pohlers is a graduate of the Institute, class of 1926, and has been identified with the selling and merchandising of textiles in the New York, Chicago and Philadelphia markets since that time. He has been conducting the Foundation's Building Campaign under Chairman Alban Eavenson from National Headquarters in New York in the capacity of Executive Campaign Director.

• REJOINS AMERICAN VISCOSE

Herbert J. Sanders, previously on military leave from American Viscose Corporation and a sergeant in the U. S. Army, has returned to the company and rejoined the Fabric Development Department of which he was a member before entering the services. He will assist Pierre Sillan, manager of the department, in handling customer contacts and in the general work of the department.

• NEW CALCO DYE

A new addition to the Calco line of metallized dyes, Calcofast Wool Bordeaux RB Conc. is featured in an announcement just issued by the Calco Chemical Division, American Cyanamid Company, Bound Brook, New Jersey. It states that the fastness to light of Calcofast Wool Bordeaux. RB Conc. is very good and is

James E. Dougherty, recently discharged from the Army with a bronze star and three battle stars, who has joined the staff of the Institute of Textile Technology as a laboratory technician.

Mr. Dougherty graduated from the Philadelphia Textile Institute in 1936. He has had considerable experience as a designer, from 1936 to 1938 with Caledonia Woolen Mills in Clifton Heights, Pennsylvania and then for a year with Bibb Manufacturing Company. He was employed by the Philadelphia Quartermaster Depot as inspector from 1939 until he entered the Army in 1942.

equally fast to washing, sea water, and sea water spotting.

The exceptionally satisfactory all-around fastness properties of this new color recommends it particularly for the better grades of men's and women's wear, tropical suitings, knitting yarns, bathing and sweater yarns, and upholstery fabrics.

It has been recommended to manufacturers of carpets for steamships, airplanes, and carpets for the seashore.

The new Calco Color Announcement contains detailed information on the general fastness properties as well as full instructions for the application of this new improved color.

Copies of this Announcement may be obtained by writing the Advertising Department, Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J.

• DYESTUFFS

Content of *Dyestuffs* for December 1945, publication of the National Aniline Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y., are described by the following titles: "Salt, A Most Useful Mineral Substance" by E. B. Tustin, Jr.; "Methods of Dyeing Leather"; "1946—Spring Shades for Women's Gloves"; "One Hundred Years of William Gregg and the Graniteville Company"; "Double Crabbing" (Continued); "The Antiseptic Properties of Surface Active Agents" by Lawrence H. Flett.

Copies of *Dyestuffs* are available upon request to National.

J. H. McMurray, who has been appointed an assistant manager of the Calco Chemical Division, American Cyanamid Co. Prior to his new appointment, Mr. McMurray was Calco's Director of Engineering and Construction. While attending Pratt Institute in 1915, he did special work for Calco and later, after attending Yale University, he returned to Calco as chief draftsman. During World War I, he served as a Captain in the Ordnance Department and then returned to Calco as Superintendent of Maintenance and Construction and later became Divisional Manager and Chairman of the Works Committee.

It is also announced that C. E. Mensing has been appointed Director of Engineering, C. L. Jones, Chief Engineer, and J. F. McGreevy, Assistant Manager of Maintenance.

Max B. Kaesche, who has been appointed "Field Sales Supervisor" of Sandoz Chemical Works, Inc. Mr. Kaesche has been associated with Sandoz since the founding of the sales organization in this country in 1919. In 1942 he volunteered for army service and has recently returned from active duty in Europe after having served as a major on the staff of the Third Army.

Col. James E. Baker, who has joined the Morton Chemical Co. of Greensboro, N. C. He will be located in Greenville, S. C., where he will be in charge of the company's office in that city and will have supervision of all sales in the South Carolina, Georgia and Alabama territory. Col. Baker had over five and one-half years of duty with the Army and was recently deputy chief of the Clothing and Equipage Branch, Office of the Quartermaster General.

• JOINS MONSANTO

Monsanto Chemical Company has announced that Nate L. Crabtree, formerly an advertising agency executive, has been employed to assist in merchandising its textile chemicals. Mr. Crabtree will serve as special assistant to D. S. Dinsmoor, general manager of the company's Merrimac Division, with headquarters at Everett, Mass.

Monsanto's textile chemicals include Resloom, which is said to control shrinkage and increase wrinkle resistance; Syton, which is said to increase strength, improve finish and serve as a delusterant and Merlon, which is said to prolong wear.

• JOINS MARLER CHEMICAL

Paul Davis has joined the sales organization of Marler Chemical Co., Cleveland, Tennessee, after having received his discharge from the United States Navy.

• USE OF LANASET

Over 100 woolen mills have submitted fabrics for test treatments with Lanaset resin for wool shrinkage control to the laboratories of the American Cyanamid Company's Textile Resin Department at Bound Brook, New Jersey, according to Richard E. Sumner, manager.

Following successful tests, many of these firms are now working out the final problems of practical application in their mills with the assistance of technicians from the company. As a result it is believed that sizeable quantities of washable wool fabrics from these mills will appear on the market in the fall of 1946, with amounts rapidly increasing throughout 1947.

Almost all types of woolen fabrics have been tested, including tubular knit, blanket material, flannels, blends of wool and ravon, men's worsteds, and a wide range of fabrics intended for use in women's apparel, sportswear, children's and infants' wear.

In addition to plans for use of Lanaset in established lines, many mills are designing entirely new weaves and constructions especially for the Lanaset treatment. Factors in fabric design that affect successful wool shrinkage control are tension of yarns, high or low twist, oil content, the order and sequence of mechanical finishing processes used, use of washable dyes, and the use of other chemicals in finishing.

• BOOKLET ON ALCOHOLS

"Alcohols," a new booklet containing complete information about 15 synthetic alcohols produced by Carbide and Carbon Chemicals Corporation, has just been published. One of a series of booklets about organic chemical groups, this booklet lists properties, specifications, shipping data, and information about the uses of alcohols, as well as graphs showing the variation of important properties with respect to temperature, their properties in aqueous solutions, evaporation rates, and solvent power in combination with other solvents. A compilation of constant boiling mixtures and a handy bibliography help make this publication important for reference. Copies may be obtained from Carbide and Carbon Chemicals Corporation, 30 East 42nd Street, New York 17, N. Y. by requesting Form 4731.

• PATENTS RASCHEL FABRIC

A raschel knit fabric in which the shape of the meshes and the width of the fabric have been set by use of a cellulosic material has been developed by Sidney M. Edelstein, technical director of Dexter Chemical Corp. and will be made available to the industry, it is learned. This fabric is said to have stability against normal conditions of use and laundering.

Patent number 2,389,421 has been granted Mr. Edelstein. It covers a knitted fabric having space series of warp threads and substantially closed loops extending from one of the series and interlaced with the threads of an adjacent series, so as to limit movement away from each other of the series of warp threads. The loops are in elongated condition so that the two sides of each loop are in close proximity to each other.

A cellulosic film bridges the space within the loops, holding together the two sides of the loops, restricting movement of warp threads within the loops under ordinary conditions of use and laundering and serving to set the shape of meshes in and in the approximate width of the fabric but not closing the meshes in the fabric. Eight claims are covered in the patent.

• TRI PERSONNEL CHANGES

The Textile Research Institute, Inc., announced recently the resignation of Giles E. Hopkins as Director of Research, and the appointment of John C. Whitwell as Acting Director of Research.

Mr. Hopkins, who has been with the

H. A. Reinhardt, acting technical director of the Bigelow-Sanford Carpet Company since 1944, who has been appointed technical director. Mr. Reinhardt, who is a member of the technical committee of the Institute of Carpet Manufacturers of America, has been with Bigelow-Sanford since his graduation from Rensselaer in 1930. He is also a member of the Industrial Research Institute and A.S.T.M.

Institute for the past two and a half years, is leaving to take up independent activities. These activities in research are comparable to the basic objectives of the Textile Institute and he plans to continue cooperating with them. He has been active in various technical societies in the textile industry and in the chemical industry.

With the appointment of Mr. Whitwell as Acting Director of Research, the Institute is recognizing the ability of one of its own research men. Mr. Whitwell has been in charge of the Institute's laboratory at Princeton and will carry on the same research in his new capacity. He is also Associate Professor, Department of Chemical Engineering, Princeton University.

● FELT ASSOCIATION OFFICERS

Announcement was made recently at the annual meeting of the Felt Association, Inc. held at the Union League Club, New York, that the following officers were elected for 1946.

L. H. Hansel, president of The Felters Company, Boston, re-elected president; T. J. Lawless, president of the American Felt Company, Glenville, Conn., vice-president and W. J. Parker, New York, secretary-treasurer.

Directors of the Association for 1946 are Cornelius A. Hubner, A. N. Sudduth, Herman Berglund and Messrs. Hansel and Lawless.

● SOCMA OUTING

An outing of the Synthetic Organic Chemical Manufacturers Association will be held on June 13-14 at the Seaview Country Club, Absecon, N. J. The Committee in charge of arrangements is composed of A. T. Loeffler, chairman, M. Lemmermeyer and C. A. Mace.

● HOOKER ASSIGNMENTS

The Hooker Electrochemical Company of Niagara Falls, N. Y., has recently assigned Charles Daving as salesman making his headquarters at Cincinnati, Ohio. Mr. Daving, a graduate of Capitol University, spent a number of years in plant work at Niagara Falls prior to his recent assignment.

Lloyd S. Bovier has been assigned to the Sales Development Department with headquarters at Niagara Falls. Mr. Bovier, formerly sales representative in the central states, will devote himself to field work in the application of new Hooker Chemicals to industry.

● PERSONNEL CHANGES, STEIN, HALL

Raymond J. Payne, of Kannapolis, N. C., who during five years of Army service rose ten grades from buck private to major, has joined the Charlotte Branch office sales staff of Stein, Hall & Co., Inc., New York.

Mr. Payne is a textile engineering graduate of North Carolina State College, class of 1940, and gained considerable experience in textile mills during the summers of his college career. He volunteered for Army service in October, 1940, and returned to inactive status January 31 this year, with the American Defense Ribbon, Purple Heart and Oak Leaf Clusters, ETO Ribbon with two campaign stars—Normandy and Northern France—and the Combat Infantry Badge. His latest promotion, to the rank of major, came December 23 after he had completed his military service.

Edwin A. O'Neill, who for five years has been a member of the sales staff of the Philadelphia branch office, has been appointed acting manager of the company's St. Louis branch at 4030 Chouteau Ave. He succeeds Morrell H. Hayman, who died recently after managing the St. Louis office for 17 years.

Lt. Col. J. R. Adams has been appointed manager of the Development Department of the Technical Division.

As manager of the Development Department he will take products as developed by Stein-Hall laboratories and pilot them through their plant test periods in the field until they are perfected and released for sale.

● WINS NAVY AWARD

Sylvania Industrial Corporation has won the U. S. Navy Certificate of Achievement, according to an announcement from the Navy Department to the employees of the company. Given "in recognition of exceptional accomplishment in behalf of the United States Navy and of meritorious contribution to the national war effort," the award was made on the basis of their work in supplying Cellophane and other cellulose products, some of them still secret, during the war.

Ames B. Hettrick, who has been appointed assistant manager of the Pigment Department, Calco Chemical Division, American Cyanamid Co. He has been manager of the former Virginia Chemical Corporation, Titanium Dioxide Plant, at Piney River, Va., since its acquisition by Calco. He will continue to make his headquarters at Piney River. Mr. Hettrick was formerly vice-president and general manager of the Virginia Chemical Corp. and previously was connected with the Southern Mining Products Corp. and Stone & Webster Engineering Corp.

OBITUARY

N. ARTHUR LAURY

N. ARTHUR LAURY, a production executive of the Calco Chemical Division, American Cyanamid Company, Bound Brook, New Jersey, before his retirement in October 1945, died unexpectedly on January 26, 1946, at his Hollywood, Florida, winter home.

Mr. Laury had a nation-wide reputation in the field of chemistry as an authority on the manufacture of heavy chemicals, particularly the acids, sulfuric, hydrochloric, nitric and hydrofluoric. His outstanding knowledge of chemistry received public recognition upon his selection to prepare the book, "Hydrochloric Acid and Salt Cake," to be included in the American Chemical Society Monograph Series.

Mr. Laury was granted many basic patents during his lifetime, most noteworthy being those on manganese separation.

A native of Vermont, Mr. Laury attended the University of Vermont. After his graduation in 1898, he joined the General Chemical Company, specializing in the manufacture of heavy chemicals, and in 1927 joined the Calco organization. After spending several months studying European acid plant methods, Mr. Laury became manager of the Calco acid operations. Before his retirement last year, Mr. Laury had been devoting his entire time to chemical research on acids and improving the methods for their manufacture.

He is survived by his wife and a son.

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- **BRIGHTNESS OF SHADE**
- **ALL-PURPOSE FASTNESS**

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The new Calcofast Wool Bordeaux RB Conc. augments an already substantial list of Calcofast dyes, all of which dye level, uniform shades on carbonized wool. They are highly desirable in fashionable shades for suitings, neckwear, bathing suits, or other purposes requiring good fastness.

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	WASHING	LIGHT FULLING	DRY CLEANING

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CALCOFAST WOOL YELLOW R
CALCOFAST WOOL ORANGE RN
CALCOFAST WOOL PINK N
CALCOFAST WOOL BORDEAUX BN
CALCOFAST WOOL BORDEAUX RB CONC.
CALCOFAST WOOL RED G
CALCOFAST WOOL BROWN GM
CALCOFAST WOOL GREEN BS
CALCOFAST WOOL GREEN DKB
CALCOFAST WOOL BLUE BN
CALCOFAST WOOL BLUE 2G
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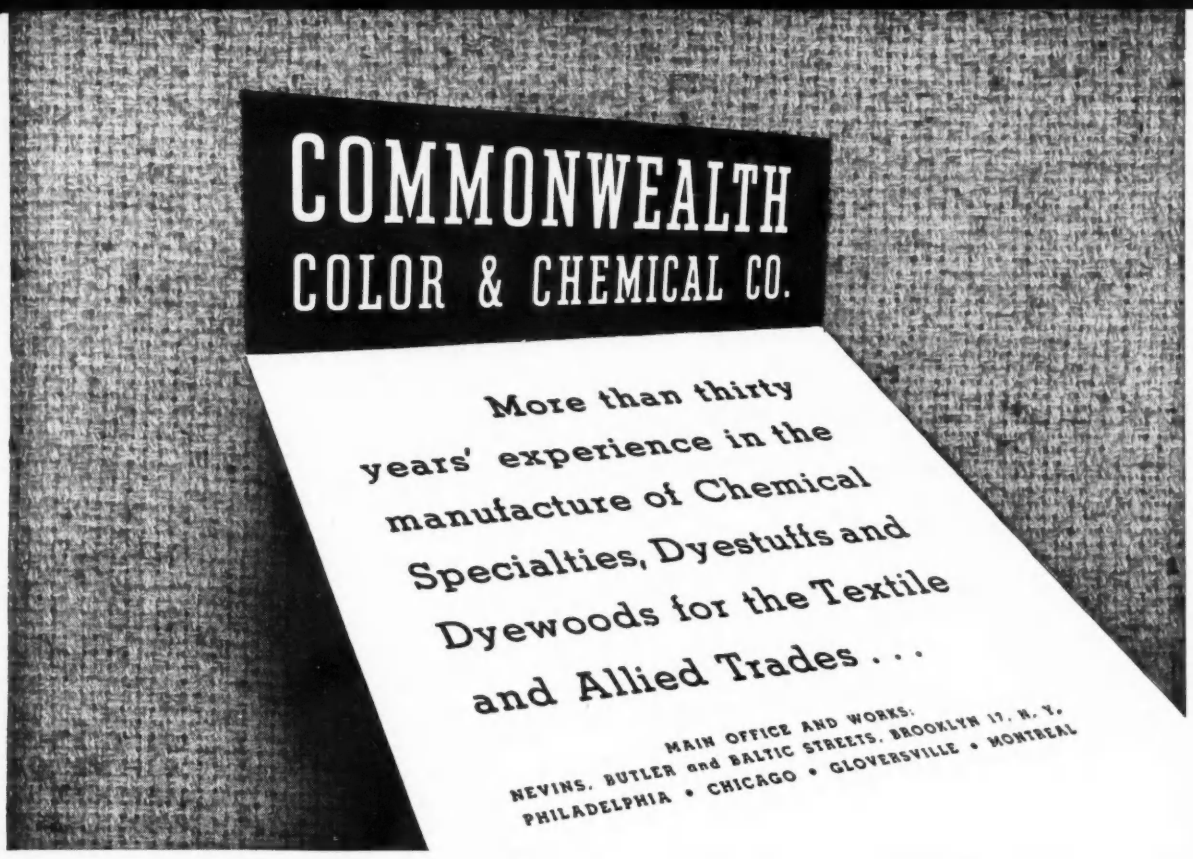
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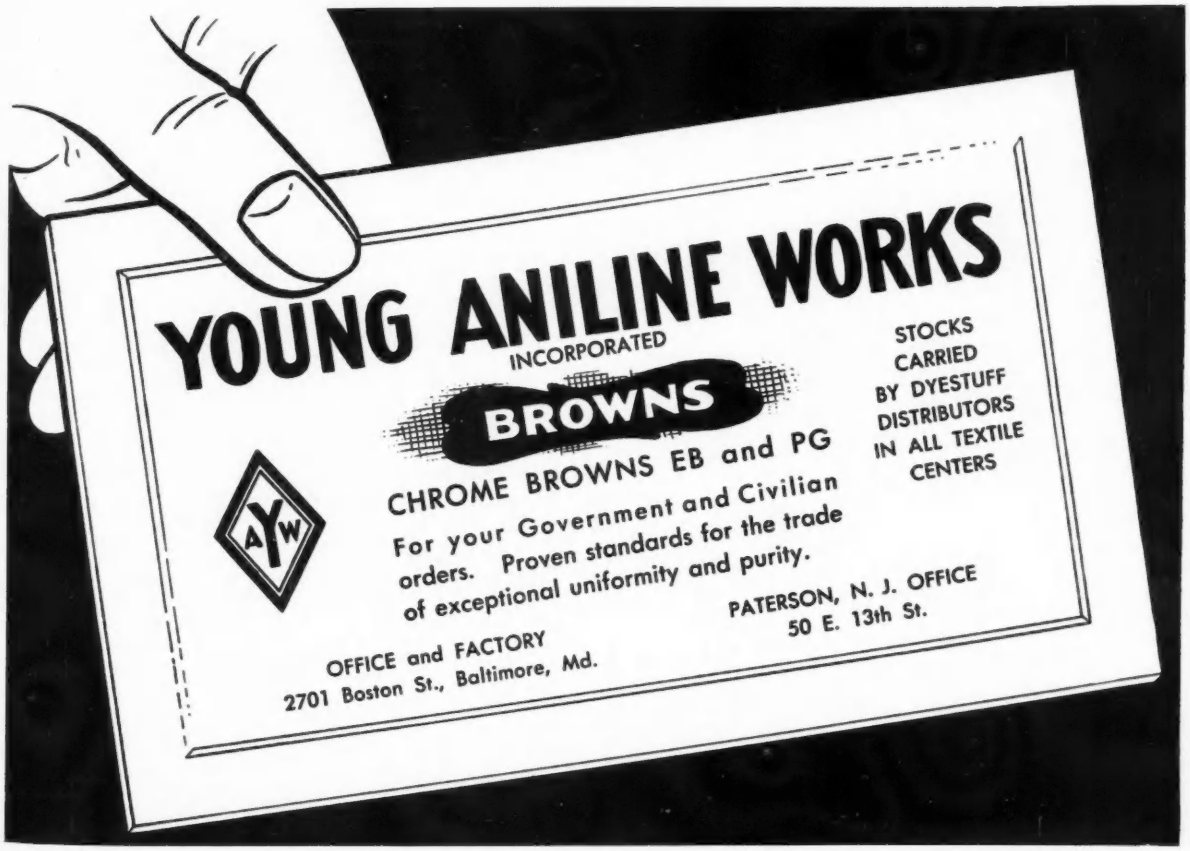
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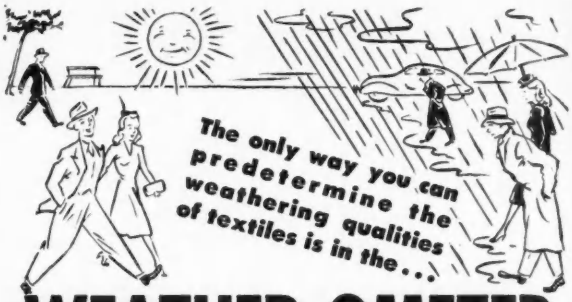

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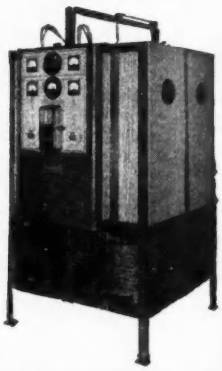

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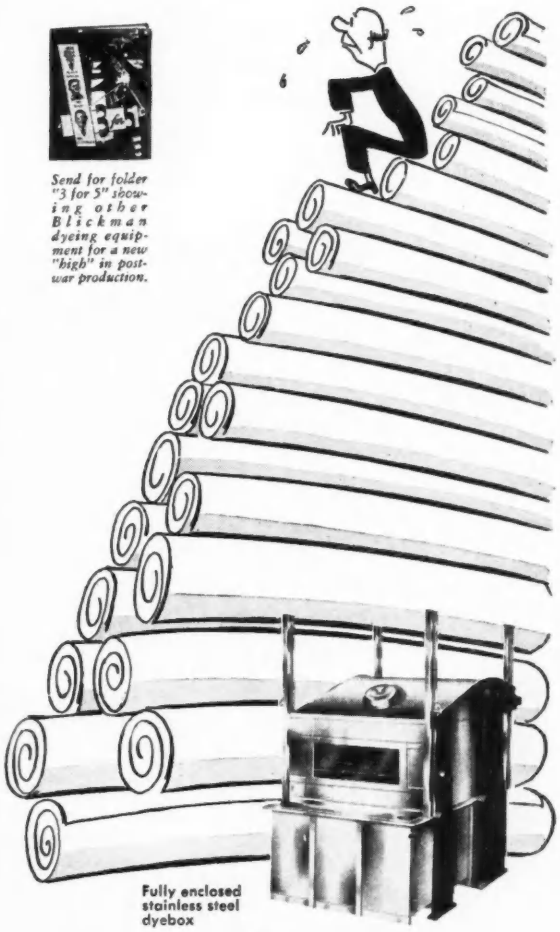
When your rush season is on—with your salesmen clamoring for delivery and your customers begging for action—the real profit possibilities of Blickman stainless steel textile dyeing equipment are *most* in evidence.

The modern, fully enclosed, Blickman dyebox is a perfect example. You can clean it in minutes instead of hours. You can change colors after a quick rinse instead of a boil-out. And you, therefore, get more runs per day. Add to that the important savings in steam, water, and operating time this dye box produces and you can figure by simple arithmetic that one busy season will pay for the equipment. Investigate now.

Send for folder "3 for 5" showing other Blickman dyeing equipment for a new "high" in post-war production.



Fully enclosed stainless steel dyebox

S. BLICKMAN, Inc.

102 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY

Manufacturers of stainless steel textile equipment, dye-boxes, linings, cylinders, dry cans, hoods and tanks.

• CLASSIFIED ADVERTISEMENTS •

CONFIDENTIAL EMPLOYMENT SERVICE — We invite correspondence (confidential) with Dyers, Chemists, Colorists, Superintendents, Master Mechanics, Office Managers, and others seeking positions and with employers seeking high-grade men to fill vacancies or to make replacements. Charles P. Raymond Service, Inc., 294 Washington St., Boston, Mass. Over forty-five years in business.

WANTED: TECHNICAL SALES ASSISTANT to become permanently connected with nationally recognized manufacturer of textile processing specialties. Prefer graduate of textile institute with mill experience. Will act as assistant to district manager covering Minnesota, Wisconsin, Iowa, Illinois, Indiana and Ohio. Salary plus bonus. Write giving complete educational and business background. Replies held in strict confidence. Our organization knows of this advertisement. Write Box 820.

POSITION WANTED: Textile Chemist, Sc. D., twelve years mill-experience in dyeing and finishing cotton, rayons, wool. Five years applied textile research. Up-to-date on resins and synthetic fibers. Desires leading position in production control research and development of textile processing industry. Write Box 822.

POSITION WANTED: Laboratory Assistant—Textile Colorist—Young, ambitious, accurate, dependable, would like position in textile laboratory of progressive dyehouse or with dyestuff or chemical specialties manufacture. Philadelphia, Write Box 824.

WANTED: Textile Engineer to represent National Cotton Council in contacts with research laboratories and industrial consumers of cotton. Good scholastic record, successful practical experience and aptitude for personal interviews are essential qualifications. Position should appeal to man with broad appreciation of cotton problems and interest in maintaining wide contacts throughout industry. Location Memphis, Tennessee. Application should include full statement of education and experience, evidence of special aptitudes. Age, expected salary, recent photograph desired. Write to National Cotton Council of America, 1416 F Street, N. W. Washington 4, D. C.

Nationally known dyestuff manufacturer has an opening for a salesman in the metropolitan New York district. Prefer a young man currently residing in this area, with textile and dyestuff background. State age, education, experience and personal data. Box 828.

WANTED TO PURCHASE: Textile Chemical Company equipped to manufacture Soaps and various Textile Specialties. Box 826.

WANTED: Manager Superintendent for dyehouse. Applicant has to be a dyer of rayon and cotton yarns. State full particulars, experience, age, salary desired. Box 827.

WANTED: Scott inclined plane tester, 2-4-25-50 lbs. capacity. Milton Harris Associates, 1246 Taylor St., N. W. Washington 11, D. C.

WANTED: First class experienced salesman in dyestuff and chemical specialties for South Carolina, Georgia and Tennessee. Must have a good following and at least 5 years experience in this territory. Write full details, in confidence to Box 829.

Dyestuff Manufacturer has openings for technically trained salesmen in North-South Carolina, Pennsylvania, New Jersey and New York. Please give complete details regarding background and salary desired to start. Box 830.

POSITION WANTED: Veteran recently discharged, seeks position as Textile Chemist or suitable place in textile trade. Graduate Textile School and two years experience. Box 825.

POSITION AVAILABLE for college graduate with chemical degree, familiar with textile processes and utilization of textile treating agents. In reply please provide complete details concerning education, experience, personal data, salary desired, and recent photograph. Those not qualified, please do not apply.

Director of Industrial Relations
Emery Industries, Inc.,
4206 Carew Tower,
Cincinnati 2, Ohio.

of six hosiery mills in Georgia which will produce nylons for the nation.

These Georgia nylons start as a cone of nylon yarn, already sized, from which two dozen pairs of hose can be knitted. The yarn goes through a liquid called Kalpinol, which lubricates the thread and makes it easy to work with on the knitting machines.

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KALPINOL

—a Kali lubricant that reduces friction on the needles and sinkers.

Yarns wet with KALPINOL give a good stitch, then dry within two inches of the needles. Stitch remains set. Birdseyes or slipping of the stitch are avoided. Rolling is prevented, making seaming easier.

A result of Kali cooperation. KALPINOL is one of a full line of Kali textile Chemicals.

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Eliminates 3 to 5 Handlings

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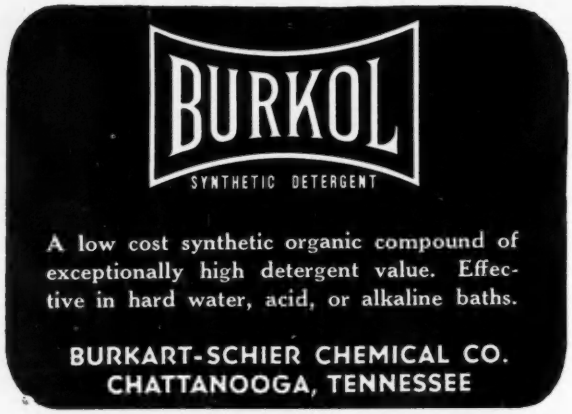
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—in Fine Crystalline Form

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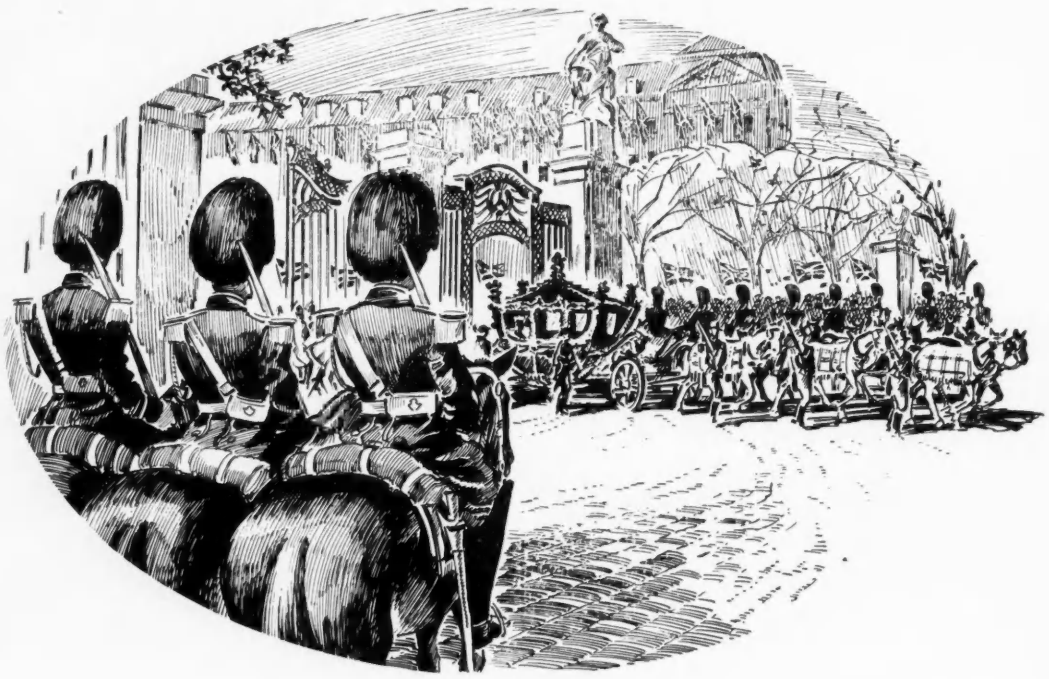

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